S.22-88



#### OFFICE OF THE VICE-PRESIDENT, ACADEMIC AND PROVOST

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August 15, 2022

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**MEMORANDUM** 

RE:

ATTENTION Senate DATE

FROM Wade Parkhouse, Vice-President, PAGES 1/1

Academic and Provost and

Chair, SCUP

SCUP 22-17 Establishment of the Visual & INteractive Computing Institute (VINCI) Revised

At its July 13<sup>th</sup>, 2022 meeting, SCUP reviewed and approved the establishment of the Visual & INteractive Computing Institute (VINCI) for a five-year term.

**Motion:** That Senate approve the establishment of the Visual & INteractive Computing Institute (VINCI) as an institute for a five-year term.

C: Y. Furukawa; P. Chilana; M. Richards



#### Memorandum

From: Angela Brooks-Wilson, Associate Vice-President, Research pro tem Date: June 30, 2022

Re: Visual & INteractive Computing Institute (VINCI)

To: Wade Parkhouse, Chair, Ex-officio, Senate Committee on University Planning (SCUP)

Attached is a proposal for the establishment of the Visual & INteractive Computing Institute (VINCI). The proposal is led by the inaugural Directors of the Institute, Drs. Yasutaka Furukawa (School of Computing Science) and Parmit Chilana (School of Computing Science; Associate Member, School of Interactive Arts & Technology)

The proposed VINCI will facilitate extensive multi-Faculty collaborative research on visual computing (VC), human computer interaction (HCI) and related areas. It will focus on computing technologies that further the creation, processing, reasoning, display of, and interaction with visual data.

The proposed Institute aligns with three research challenges identified in SFU's Strategic Research Plan (SRP): Enhancing our world through technology, Supporting health across the human lifespan and Transforming the landscape of teaching and learning. It also fits within two of the SRP's research clusters: Big data, and Community-engaged research.

Initial members include 43 faculty members from 7 Faculties. Many members of the proposed VINCI have a history of collaborative activity.

I recommend approval as a Research Institute according to Policy R40.01.

#### Motion:

To approve the establishment of the Visual & INteractive Computing Institute (VINCI) for a 5-year term.

#### Attachments:

- VINCI Institute application
- Letter of support from the Dean of FAS
- Letter of support from the Director of the School of Computing Science



## **SFU** Research Institute Application

NAME OF INSTITUTE:

VINCI: Visual & INteractive Computing Institute

#### DESCRIPTION OF PROPOSED INSTITUTE:

Please include a statement of the Research Institute's special purpose and how its work aligns with University priorities and the VPRI Strategic Research Plan.

The VINCI institute will integrate word-class research at SFU on visual-computing (VC), human computer interaction (HCI) and surrounding areas, in alliance with growing tech-hubs in the greater Vancouver area as well as across Canada. The institute consists of the school of Computing Science at the core together with the School of Interactive Arts & Technology (SIAT), the faculty of Communication, Art and Technology (FCAT), the faculty of Arts and Social Sciences (FASS), the Beedie School of Business, the Faculty of Education, the Faculty of Environment, the Faculty of Science, and other schools in the Faculty of Applied Sciences (FAS).

The institute focuses on computing technologies towards the creation, processing, reasoning, display of, and interaction with visual data, as vision represents one of the most pervasive human experiences. The institute creates collective wisdom, helping us to understand how these computing technologies could impact society in a positive way, while mitigating harm to the people of all abilities, genders, races, ages, and backgrounds.

The strategic research plan identifies six key research challenge areas within four research clusters. The focus of the institute directly fits inside "Challenge 5: Enhancing our World through Technology". Research in visual and interactive computing such as AR/VR and immersive tech, can move us towards a future where they can help more people with a greater variety of ailments including chronic pain, autism, memory-loss, and dementia, addressing "Challenge 3: Supporting health Across the Human Lifespan". Our research into enhancing education technologies is one of the key application areas for our inclusive interaction technology, which leads to "Challenge 6: Transforming the Landscape of Teaching and Learning". Lastly, the institute will engage research activities along two of the four research clusters. First, active AI research involves the acquisition and manipulation of "Big Data". Second, the awareness of societal impact is aligned with "Community-engaged research", since we are specifically interested in supporting community-centered co-design as we work towards developing more inclusive technologies.

#### RATIONALE FOR ESTABLISHING THE INSTITUTE:

Please include statements on the added value to the research collaborative and to the University in receiving this designation, as well as, any potential societal impact (beyond what would be accomplished by individual faculty members).

The VINCI institute will enable distinguished SFU researchers in VC and HCI to 1) further establish the SFU branding, 2) seek larger group-based funding, 3) connect with world-class visual effects, interaction design and start-up companies locally in BC as well as across Canada, and 4) develop transformative technologies for education, human-health, visual arts, engineering, commerce, disaster recovery, and more.

SFU is already known to be a powerhouse in the areas of VC and HCI, yet does not have a recognized entity at a group level unlike other top schools in the world. Stanford recently established the Human-Centred Artificial Intelligence institute (HAI). University of Washington (UW) established Reality Lab specifically for VR and AR. National Science Foundation (NSF) in the USA is forming national AI Research institutes in over 40 states. UBC has CAIDA as their main AI research organization. The VINCI institute will further strengthen the reputation and branding of the SFU's strong VC and HCI groups.

Core members of the proposed institute are working on a 8-million dollar CFI grant proposal on behalf of the school of computing science (submitted for an internal SFU selection, which is followed by federal selection processes in the coming year). The existence of an institute would be a strong proof of collaboration and support from the university, making our proposal more competitive against other top Canadian universities.

An institute is also an effective means to connect to industry and foundations, who are more willing to invest in a group of strong researchers instead of an individual. For example, UW Reality Lab receives funding from Facebook, Google, Amazon, and Futurewei, which are all local to UW in Seattle. Vancouver houses vibrant visual effects and gaming industries with over 60 VFX studios and 170 gaming companies, together with an active start-up ecosystem. Toronto and Montreal are also strong global tech hubs in Canada. The institute will help us make a connection to strong local and Canadian industries.

Advances in the research areas of VC, HCI, and machine intelligence will make SFU the place that realizes the transformative potential of these technology factors for education, human-health, visual arts, engineering, commerce, disaster recovery, and more. With the development of advanced tools and technologies for data acquisition, visual communication, immersive VR/AR experience, and next generation large-display teleconference systems, the outcome of our research will significantly improve the human experience when people over distance are connected and interacting. Such experiences are ubiquitous in numerous applications under health, learning, and living. The impact of our research is amplified over many regions of BC and across Canada, where there is low population density, as well as in situations involving people who are immobile, such as patients and elderlies. The technological innovations will enable Canadian industries to maintain their global leadership, for example in the visual effects sector (the third largest in the world), IT start-up ecosystem (again the third largest), and artificial intelligence (the deep-learning breakthrough emanated from Canada).

PRIOR TO APPLYING FOR RESEARCH INSTITUTE STATUS, MEMBER OF RESEARCH INSTITUTES SHOULD NORMALLY HAVE A HISTORY OF COLLABORATIVE ACTIVITY AS A GROUP.

e.g. co-supervision of students, co-publications, or shared research data, funding, and/or projects.

The core team has made a commitment to conduct research together, to meld the graphics/vision/AI approach to human-centred design with the HCI/DataVis sense of human-centred design, allowing us to envision and create transformative new technologies. Several members of the proposed institute have already been collaborating for many years and recently came together as a team on a CFI grant proposal NOI and an NSERC CREATE NOI. Our current team of 43 co-members is joined by 18 affiliate members, spanning academia and industry and including senior full professors, mid-career scholars, and junior faculty members. Cohesiveness of the team is well reflected by co-supervision of HQPs, shared labspace (GrUVi and ixLab), and on-going research collaborations among the team members. The team members have co-authored 50+ research papers so far. These collaborative works have led to one best paper award and two best dataset awards.

If the objectives of the proposed Institute overlap with an existing Research Centre or Institute, please provide evidence of consultation where a potential conflict has been identified.

Vancouver Institute for Visual Analytics (VIVA), Center for Operations Research and Decision Sciences (CORDS), and Digital Democracy Institute (DDI) do have slightly overlapping scopes but because they have different perspectives, these overlaps will be mutually enhancing rather than conflicts with the proposed institute.

VIVA focuses on the visualization and analysis of information (i.e., visual analytics), providing training and consulting services. The proposed institute focuses on fundamental research in visual computing and takes a broader view of interactive computing and application areas, which will result in novel inventions and publications at top-tier conferences. Together these activities will help us attract more funding and recognition internationally.

CORDS focuses on the area of operations research where the core members are from the department of Mathematics. CORDS currently has Prof. Wiese from the school of computing science as an associate member, but the focus of our institute is on VC and HCI, where no members overlap.

DDI focuses on humanities and data sciences to address social equality and justice. The core members are from the school of communication. The proposed institute shares the same overall goal (human-centered research for social good) but addresses the challenges at the level of fundamental research on computing technologies.

#### PROPOSED DIRECTOR(S):

Please include a statement on the provision for the appointment of the Director.

The inaugural Directors will be Associate Professor Yasutaka Furukawa (School of Computing Science) and Associate Professor Parmit Chilana (School of Computing Science; Associate Member in School of Interactive Arts & Technology)

#### MEMBERSHIP:

The table shows the list of 43 confirmed members of the institute from 14 different departments over 4 core areas:

- 1) **Visual Computing** (AI/ML, graphics, vision, mathematical modeling, etc.)
- 2) **Interactive Computing** (HCI, visualization, human-centred design, etc.)
- 3) **Social Implications** (digital media, ethics, policy, philosophy, governance, etc.)
- 4) Domain-Specific Applications (languages, health, music, learning, business, history, etc.)

14 out of 43 members are female. 14, 7, and 22 members are assistant, associate, and full professors, respectively.

#### VISUAL COMPUTING

| Name          | Expertise                   | Position  | Department        | Faculty |
|---------------|-----------------------------|-----------|-------------------|---------|
| Yagiz Aksoy   | Graphics, Vision            | Assistant | Computing Science | FAS     |
|               |                             | Professor |                   |         |
| Angel Chang   | Natural Language Processing | Assistant | Computing Science | FAS     |
|               |                             | Professor |                   |         |
| Manolis Savva | Graphics                    | Assistant | Computing Science | FAS     |
|               |                             | Professor |                   |         |
| Angelica Lim  | Robotics                    | Assistant | Computing Science | FAS     |
|               |                             | Professor |                   |         |
| Richard Zhang | Graphics                    | Professor | Computing Science | FAS     |
| Mo Chen       | Robotics                    | Assistant | Computing Science | FAS     |
|               |                             | Professor |                   |         |
| Greg Mori     | Machine Learning, Vision    | Professor | Computing Science | FAS     |
| Ke Li         | Machine Learning, Vision    | Assistant | Computing Science | FAS     |
|               |                             | Professor |                   |         |
| Hang Ma       | Robotics                    | Assistant | Computing Science | FAS     |
|               |                             | Professor |                   |         |
| Andrea        | Graphics, Vision            | Associate | Computing Science | FAS     |
| Tagliasacchi  |                             | Professor |                   |         |
| Ali           | Graphics                    | Assistant | Computing Science | FAS     |
| Mahdavi-Amiri |                             | Professor |                   |         |
| Kangkang Yin  | Graphics                    | Associate | Computing Science | FAS     |
|               |                             | Professor |                   |         |

| Yasutaka        | Graphics, Vision   | Associate | Computing Science       | FAS     |
|-----------------|--------------------|-----------|-------------------------|---------|
| Furukawa        |                    | Professor |                         |         |
| Parvaneh Saeedi | Computer Vision    | Associate | Engineering Science     | FAS     |
|                 |                    | Professor |                         |         |
| Paul Tupper     | Cognitive Science  | Professor | Mathematics             | Science |
| Don Estep       | Numerical Analysis | Professor | Statistical & Actuarial | Science |
|                 |                    |           | Science                 |         |
| Jiguo Cao       | Numerical Analysis | Professor | Statistical & Actuarial | Science |
|                 |                    |           | Science                 |         |

## INTERACTIVE COMPUTING

| Name           | Expertise                    | Position  | Department        | Faculty |
|----------------|------------------------------|-----------|-------------------|---------|
| Sheelagh       | Human Computer Interaction,  | Professor | Computing Science | FAS     |
| Carpendale     | Visualization                |           |                   |         |
| Parmit Chilana | Human Computer Interaction,, | Associate | Computing Science | FAS     |
|                | Learning                     | Professor |                   |         |
| Xing-Dong Yang | Human Computer Interaction,  | Assistant | Computing Science | FAS     |
|                | Fabrication                  | Professor |                   |         |
| Woo Soo Kim    | Fabrication, Robotics        | Associate | MSE               | FAS     |
|                |                              | Professor |                   |         |
| Edward Park    | Wearables, Hardware          | Professor | MSE               | FAS     |
| Lyn Bartram    | Visualization, Visual        | Professor | SIAT              | FCAT    |
|                | Analytics                    |           |                   |         |
| Wolfgang       | Graphics, Human Computer     | Professor | SIAT              | FCAT    |
| Stuerzlinger   | Interaction                  |           |                   |         |
| Will Odom      | Interaction Design           | Assistant | SIAT              | FCAT    |
|                |                              | Professor |                   |         |
| Ron Wakkary    | Interaction Design           | Professor | SIAT              | FCAT    |
| Nick Hadley    | Spatial Interfaces/          | Associate | Geography         | ENVI    |
|                | Visualization                | Professor |                   |         |
| Mark Blair     | Cognition/ Psychology        | Associate | Psychology        | FASS    |
|                |                              | Professor |                   |         |

## SOCIAL IMPLICATIONS

| Name              | Expertise                    | Position  | Department        | Faculty  |
|-------------------|------------------------------|-----------|-------------------|----------|
| Terri Griffith    | Technology understanding and | Professor | Business          | Business |
|                   | implementation               |           |                   |          |
| Wendy Chun        | Digital democracy            | Professor | Communication     | FCAT     |
| Sun-ha Hong       | Digital Media                | Assistant | Communications    | FCAT     |
|                   |                              | Professor |                   |          |
| Frederik Lesage   | Digital Media                | Associate | Communications    | FCAT     |
|                   |                              | Professor |                   |          |
| Chelsea Rosenthal | Ethics, Philosophy           | Assistant | Philosophy        | FASS     |
|                   |                              | Professor |                   |          |
| Steven Weldon     | Politics                     | Professor | Political Science | FASS     |

## DOMAIN-SPECIFIC APPLICATIONS

| Name               | Expertise                              | Position               | Department          | Faculty            |
|--------------------|--|------------------------|---------------------|--------------------|
| Ghassan Hamareh    | Medical imaging                        | Professor              | Computing Science   | FAS                |
| Max Libbrecht      | Medical imaging                        | AssistantPr<br>ofessor | Computing Science   | FAS                |
| Fred Popowich      | Natural Language Processing            | Professor              | Computing Science   | FAS                |
| Tenzin Doleck      | Learning, Data Science                 | Assistant<br>Professor | Education           | Education          |
| Michelle Levy      | Humanities                             | Professor              | English             | FASS               |
| Robert Hogg        | Health                                 | Professor              | Health Sciences     | Health<br>Sciences |
| Maite Taboada      | Natural Language Processing            | Professor              | Linguistics         | FASS               |
| Steve DiPaola      | Artificial Intelligence,<br>Creativity | Professor              | SIAT                | FCAT               |
| Diane Gromala      | VR and health, HCI                     | Professor              | SIAT                | FCAT               |
| Phillippe Pasquier | Machine Learning, Music                | Professor              | SIAT                | FCAT               |
| Bernhard Riecke    | AR/ VR, cognition                      | Professor              | SIAT                | FCAT               |
| Lesley Shannon     | Computing systems                      | Professor              | Engineering Science | FAS                |

(to add a new row, right click and select "insert – new row below")

FAS: Faculty of Applied Sciences

FASS: Faculty of Arts & Social Sciences

FCAT: Faculty of Communication, Art and Technology SIAT: School of Interactive Arts and Technology

MSE: Mechatronic Systems Engineering

#### ORGANIZATION STRUCTURE AND INTERNAL GOVERNING PROCESS:

The steering committee will consist of five members: The Director, the Associate Director (or two co-Directors instead), and the three committee members. Steering committee members shall be formed from at least 2 faculties. A steering committee member shall serve for at least two years (unless unavoidable circumstances occur) and up to three years. Upon a need to invite a new steering committee member, one shall nominate or self-nominate, and the current steering committee members make a decision. A new steering committee member is encouraged to start with a staggered period of half a year. Steering committee members shall meet at least twice a year to discuss the following matters. The majority of the steering committee members (i.e., three members) shall be present at meetings. Decisions shall be made by a quorum of at least three (3) steering committee members (both present and absent at a meeting). A new steering committee member cannot vote for the decisions during the staggered period. A steering committee member must be an institute member or an institute affiliate member.

#### The Steering Committee will:

- accept new (if any nominations or self-nominations) or remove existing members of the institute;
- accept new (if any nominations or self-nominations) or remove existing affiliate members of the institute;
- oversee the distribution of funding and resources granted to the institute;
- advise funding opportunities for institute members;
- discuss plans on group activities as an institute at appropriate events;
- discuss other partnerships or affiliate memberships to join;
- discuss the institute vision, public messages from the institute, and the communication plans.

#### PROCEDURES FOR RATIFYING NEW MEMBERS:

An SFU faculty member may request to be affiliated with the Institute at any time. In semi-annual steering committee meetings, the steering committee will evaluate each candidate based on the research expertise and interests and make decisions. The institute website keeps track of the affiliated members and explains the process of becoming an institute member.

#### **A**FFILIATES:

The Institute will enjoy strong relationships with external academic and industrial researchers and institutions. The following are confirmed affiliate members/institutions:

#### **Academic:**

Miguel Nacenta, HCI, Computer Science, (Victoria)

Charles Perin, HCI, Computer Science, (Victoria)

Sowmya Somanath, HCI, Computer Science, (Victoria)

Joanna McGrenere, HCI, Computer Science, (UBC)

Wesley Willett, Visual analytics, Computer Science, (Calgary)

Helen He, HCI, Computer Science, (Calgary)

Christopher Collins, InfoVis, (Ont. Tech)

Andrea Bunt, HCI, Computer Science, (Manitoba)

Daniel Cohen-Or, Graphics, Computer Science, Tel-Aviv

Hui Huang, Graphics, Computer Science, Shenzhen University

Oliver van Kaick, Graphics, Computer Science, Carleton University

Chi-Wang Fu, Graphics, Computer Science & Engineering, Chinese University of Hong Kong

#### **Industrial:**

Chin-Yi Cheng, Architecture & AI, Autodesk Inc.

Jun Gong, HCI, Apple

Teddy Seyed, HCI, MicroSoft Research

Yang Wang, Computer Vision, Manitoba/ Huawei

Alison Hughes, Facebook

Bon Adriel Aseniero, InfoVis, Autodesk

#### TRAINING AND MENTORSHIP OPPORTUNITIES FOR STUDENTS:

The institute members have an excellent record for training PhD, Masters, and Undergraduate students in research. Collectively, our members have trained 200+ HQP who are now pursuing thriving careers in academia and industry. Our members will continue this practice of working closely with HQP and giving them opportunities to publish first-authored papers at top venues and participate in industry internships. Several of our institute members also have a history of hosting visiting students from other universities around the world and we will continue this practice.

In the last 5 years, the demand for skills in visual and interactive computing has increased exponentially in industry. The CS department has recently started a specialized Masters program in Visual Computing where the majority of institute members are playing an active role in curriculum development and delivery. We have recently added half a dozen new courses on topics related to visual and interactive computing and will continue to revamp the curriculum. Given the industry demand for visual and interactive computing skills, we actively work with our partners to secure internships and full-time job opportunities for SFU students through programs such as Mitacs. The institute will allow us to form new types of networks and engagements with industry in Canada and beyond as well as explore how to foster additional complementary visual computing skills (e.g., in design, data ethics, responsible AI, data policy, entrepreneurship, among others).

Additionally, we also plan to host workshops and summer schools on topics related to visual and interactive computing. A subset of the core members of the institute already submitted an NSERC CREATE NOI earlier this year to propose an interdisciplinary training program that would integrate deep, experiential understanding of the principles of responsibility, ethics, and morality in data related to visual and interactive computing problems. This grant was one of the few selected by the internal university review process. Although the NOI was not successful in the first round with NSERC, the team is interested in revamping the ideas and the plans next year.

#### RESEARCH INSTITUTE 5-YEAR GOALS AND KEY PERFORMANCE INDICATORS:

Our 5-year goals and key performance indicators are related to research output, securing large collaborative grants for research and infrastructure support, and bringing international visibility to visual and interactive computing at SFU.

- 1. Research Output
- 2. Collaborative Grants for Large Research and Infrastructure Needs
- 3. International Visibility & Impact
- 4. Community engagement & impact

#### **Research Output**

Members of the institute collectively have one of the best records in Canada for research output in top, high-impact visual and interactive computing venues, such as CVPR, ICCV, ECCV, CHI, UIST, InfoViz, CSCW, among others. Several members already have a history of collaborating, co-advising graduate students, and co-authoring publications together. Being a part of a joint institute will further solidify these relationships and open up opportunities to pursue other new collaborations to tackle more high-impact problems. Over the past year, we have established our inaugural research chairs in visual computing in Computing Science and plan to grow this in the future more broadly across at SFU. Several of our other members also hold other chair positions, including NSERC CRC, CIFAR, Ebco-Eppich, among others.

#### **Collaborative Grants for Large Research and Infrastructure Needs**

One of the core missions of this institute is to bring together top researchers at SFU to work on large collaborative grants and help bring visibility to SFU. For example, currently led by Dr. Carpendale & Dr. Zhang, several of our team members are pursuing CFI infrastructure support under the umbrella of "Transformative Technologies" (TnT). Our goal is to further opportunities for networking and support for grant writing so that institute members can together pursue large collaborative network grants and alliance grants with industry partners.

#### **International Visibility & Impact**

In addition to growing our research output at top international research venues in visual and interactive computing, our institute members will bring international visibility by hosting major conferences and/or workshops and having dedicated time for SFU demos during these events. This will allow us to build stronger relationships with our international partners and also showcase the work being done at SFU. We currently have different speaker series across departments and disciplines; with the institute, we plan to start a new joint invited speaker series that will

allow us to host top researchers in visual and interactive computing at SFU. We will also be securing funds to send our institute members to give talks at top research and industry labs around the world. In addition, we will be providing research updates and demonstrations of our finished projects through a persistent public YouTube channel which will be accessible from our institute's website.

#### Community engagement & impact

While greater international visibility is a priority for our institute members, we are all invested in also improving our local community engagement. One of the proposed ideas in the CFI is the idea of a mobile lab so we can do human-centred research by reaching more diverse populations / contexts of study across BC. Many of the members are already involved in local outreach activities, such as promoting computing science to girls in BC high schools. We hope that the institute can serve as a platform so we can sponsor summer camps and outreach initiatives related to teaching programming / AI skills using visual and interactive computing as a core application area. In addition to hosting international conferences / workshops, we plan to have a regular local community research showcase day for everyone at SFU and our local industry and non-profit partners. One of our ideas is to make the annual CS Research Day into a multi-track event where we can have visual and interactive research as the core focus.

#### CURRENT RESOURCES AND FUTURE SUSTAINABILITY:

#### **Collaborations:**

The core team has made a commitment to conduct research together, to meld the graphics/vision/AI approach with the HCI/DataVis sense of human-centered design, allowing us to envision and create transformative new technologies. Our proposed team of institute members from SFU is joined by various application users, and spans academia and industry and includes senior full professors, mid-career scholars, and junior faculty members. Cohesiveness of the team is well reflected by co-supervision of HQPs, shared labspace (GrUVi and ixLab), and on-going research collaborations among the team members. The team members have co-authored 50+ research papers so far. These collaborative works have led to one best paper award and two best dataset awards.

#### **Funding:**

Core team members' major awards and honors include: two Canada Research Chairs, an Steacie Fellowship, two Royal Society Fellows, two CIFAR Chairs, a CS-InfoCAN Early Career Researcher Award, four NSERC Discovery Accelerators, and two SFU Distinguished Professors. Our PI was co-applicant/theme lead on NCE GRAND with team members Gromala, Chilana, and Bartram (\$23 million); lead/co-lead on Industrial Research Chair (\$2.7 million); co-applicant/theme lead on Surfnet NSERC Strategic Research Network (\$5 million); plus has held previous CFIs at Calgary totaling ~\$7 million, (lead for three, co-applicant for one). As project leaders, four members have CFI funding at SFU totaling \$3.2 million, and four members have held NSERC RTI grants totaling close to half a million. Team members work closely with the industry, including leading companies such as Adobe, Autodesk, Facebook, Microsoft, Boeing, IKEA, Google, Bentley, Ricoh, Beike, Tableau, SMART Tech, etc. A recent example of major industry support is the Huawei-SFU Joint Visual Computing Lab headed by two members of our research team, as lab directors in succession; the lab started with an initial \$3 million research funding over three years, and has been recently renewed with \$10.5 million over 7 years.

#### **Sustainability Plan:**

The ongoing collective funds in visual & interactive computing members are already used to hire a full-time admin staff (i.e., a research coordinator). We will continue using the collective funds to hire a staff, where Institute admin support is part of the work. We also hope to hire a lab manager with additional funding over the next few years, who helps with equipment purchases/check-outs, computing server maintenance, managing study-protocols, dealing with industry collaborations, etc.

We have infrastructure/space commitment in the Applied Science Building (ASB) through a CFI proposal submitted by the key members (i.e., Transformative New Technology, a Human-Centered Approach to Integrating AI in Visual Computing): 8 million dollar proposal where 2 million dollars are dedicated for renovation in the ASB building. The

members have been successful in securing infrastructure funding through John R. Evans Leaders Fund (JELF), in total approximately 2 million dollars in the past 3 years, which will be a key resource for the activities of the Institute. We will continue seeking space/infrastructure support as a group through major grants such as CFI and industrial opportunities. Lastly, 15 members of the proposed Institute have active chair positions, who will devote time for the Institute activities.

Would the establishment of this institute enable the member researchers to attract funding beyond what they would be able to do on their own? Please explain.

All of the members are strong researchers who have done very well in attracting funding and top awards individually (for example, over half of our members are recipients of NSERC Discovery Accelerator Awards). By joining our individual strengths together, the Institute will allow us to pursue larger opportunities such as CFI, large NSERC Alliance grants, SSHRC partnership grants, among others. Many of our industry collaborators (e.g., Autodesk, Facebook, Microsoft, Adobe, Apple, etc.) are also interested in funding large projects that require cross-team collaborations. The Institute will further promote interdisciplinary research by joining forces with more formal joint presence.

#### COMMUNICATION PLAN:

Provide a description of a communication plan that is aligned with University Communication policies, including plans for maintaining an up-to-date web/social media presence.

#### **Internal communication:**

- We will have an internal Slack channel for SFU members (one already exists informally) to provide easy
  access to announcements, document sharing, group messaging, etc. There will be a private space for
  members + more general space for students in multiple labs. This will encourage more group discussions
  and spawn collaboration opportunities.
- We will set up a mailing list for all the members for group communication; there will also be a general
  mailing list where any interested individuals from the SFU community can sign up for sharing
  announcements such as talks and events.

#### **External communication:**

- We will have a website that provides information about the steering committee, institute members, affiliate
  members, funding, events, publications, tech-reports, datasets, and software tools, and the institute
  membership rules. The website maintenance will be handled by student volunteers and a research
  coordinator who already works with HCI and visual computing faculty members in the school of
  Computing Science.
- We will have an Institute YouTube channel with links to relevant lectures and talk events.
- We will have social media accounts for public and academic outreach (via Twitter, Facebook, and Instagram).

#### **EVIDENCE OF SUPPORT:**

Please include evidence of support from the Dean or Associate Dean, Research of the home Faculty of the proposed Institute Director (mandatory).

Applicants may feel free to submit additional supporting documents such as letters of support and constitutions (if available).

Date: 2022 September 1st

Applicant Signature:

Prasmit Milone yet The

By signing this form, the applicant confirms they have reviewed <u>SFU Policy R40.01</u> and <u>related Procedures</u> and agrees to conduct its activities in accordance with University policies.





Applied Science Building 9971 8888 University Drive Burnaby B.C. Canada V5A 1S6

TEL + 1 778 782 4277 FAX + 1 778 782 3045

To: Dr. Dugan O'Neil Vice President, Research and International

# Support Letter for the Creation of the Visual & Interactive Computing Institute (VINCI)

Dear Dr. O'Neil:

The School of Computing Science enthusiastically supports the creation of the proposed Visual & Interactive Computing Institute (VINCI). Simon Fraser University (SFU) has one of the strongest research groups in Canada in the broad areas of Visual Computing and Human-Computer Interaction. The creation of VINCI will foster collaboration among researchers in different units across SFU, which will further strengthen the SFU prominence in these areas. VINCI will represent a focal point demonstrating the quality and breadth of the visual computing research conducted at SFU to the world, which will help in attracting talented researchers and students to SFU, creating more opportunities for national and international research collaboration, and presenting SFU as a world leader in this domain.

The School of Computing Science will provide in-kind and small cash contributions to make VINCI a success. Specifically, the School will dedicate about 25% of the time of one of its Research Coordinators to support VINCI, who will help in organizing technical events, coordinate joint research proposals, facilitate connections with industry, manage the paperwork needed for affiliates and visitors to VINCI, and provide advice on regulations and processes at SFU and various funding agencies. The School will also allocate a part of the time of its Marketing and Communications team to promote VINCI. The communication team will help in creating a website for VINCI, write news story about VINCI-affiliated researchers, and potentially run a marketing campaign to introduce VINCI to important stakeholders in the visual computing domain. In addition, a total of up to \$10,000 will be available to VINCI from the School in its first two years, which can be used to organize events, invite distinguished speakers and potential research collaborators, and support marketing activities.

The School of Computing Science is very excited about VINCI and strongly supports its creation.

Best regards,

Dr. Mohamed Hefeeda Professor and Director

hefeeda

School of Computing Science



Dr. Dugan O'Neil Vide-President, Research and International Simon Fraser University

29 March 2022

### Dear Dugan,

I have been following with considerable interest the initiative to create a new, interdisciplinary "Visual and Interactive Computing Institute" (VINCI). This initiative has my highest personal endorsement as well as the enthusiastic support of the Faculty of Applied Sciences. The timing for such an institute is perfect. Over the past decade, several clusters of research activity in visual and interactive computing have been developing and maturing wonderfully at SFU; VINCI provides a way to create focus and synergy among those clusters. I will draw attention the following observations.

- 1. SFU has among the strongest "visual computing" and "human-computer interaction" research groups in Canada.
- 2. While the School of Computing Science would form the institute's core, VINCI is intended to be inclusive from its outset. It would include participants from most academic faculties at SFU. The current declared participants include researchers from other schools in FAS, several researchers from the School of Interactive Arts and Technology (SIAT), as well as the participation from FCAT, FASS, the Beedie School of Business, Education, Environment, and the Faculty of Science. I imagine folks from FHS will sign up before long.
- 3. There are several already-active collaborations among (confirmed) institute members, including participation in the next round of CFI, which was recently approved by SFU to go forward.

While it is unclear what administrative support the institute will require, FAS will be open to contributing such support in partnership with other units.

I believe VINCI has a bright future, and FAS is fully supportive of its creation.

Yours sincerely,

Eugene Fiume, FRSC Professor and Dean