AAKAR GUPTA

Email: aakar.hci@gmail.com
US Work Authorization: Green Card https://www.aakargupta.com

INTERESTS

I am a Human-Computer Interaction researcher. I use machine learning, computational optimization, perceptual understanding, and human factors approaches together to build and evaluate human-centered AI systems.

EDUCATION

University of Toronto — Toronto, Canada
Ph. D. in Computer Science — *2013-2017*
Advisor: Prof. Ravin Balakrishnan
Thesis: "Extended Hand Attributes for Touch Input, Touch Output and Touchless Interaction"

University of Toronto — Toronto, Canada
M. S. in Computer Science — *2010-2012*
Advisor: Prof. Ravin Balakrishnan
Thesis: "Mobile Crowdsourcing in Developing Regions"

Dhirubhai Ambani Institute for Information and Communication Technology (DAIICT) — Ahmedabad, India
B. Tech. in Information and Communication Technology — *2005-2009*

EMPLOYMENT

Fujitsu Research America — 06/2023 – Present
Principal Researcher

- Conducting research on using AI models for building Human-in-the-loop systems for enterprise applications.

Meta Reality Labs Research, Redmond — 08/2020 – 01/2023
Research Scientist

- Conducted research on intelligent input interactions in augmented and virtual reality (AR/VR).
- Led research projects, defined research problems, designed experiments, built the technology interventions, conducted quantitative and qualitative evaluations, and synthesized research results via data analyses.
- Presented results, demos, and recommendations internally. Published papers externally (see C19-C34 in Publications).
- Worked in close collaboration with designers, engineers, and product stakeholders. Advised interns and engaged with external research collaborators (University/Industry).
- Research led to product transfer into Meta Quest 2.

Facebook Reality Labs, Redmond — 01/2019 – 08/2020
Postdoctoral Research Scientist

- Scientific research on HCI in AR/VR, particularly focusing on haptic interactions. Work similar as above.

University of Waterloo, Canada — 11/2017 – 12/2018
Postdoctoral Fellow. Advisor: Prof. Dan Vogel

- Scientific research on building and evaluating subtle text input for touch and wearable devices.

INRIA, Lille, France — 06/2016 – 09/2016
Research Intern. Advisors: Prof. Thomas Pietrzak and Dr. Nicolas Roussel

- Scientific research on effortless freehand gestures for mid-air interaction.

INRIA, Lille, France — 02/2015 – 04/2015
Research Intern. Advisors: Prof. Thomas Pietrzak and Dr. Nicolas Roussel

- Scientific research on advanced tactile interfaces for wearables.

IBM Research, Bangalore India — 08/2012 – 01/2013
Research Intern. Advisors: Dr. Bikram Sengupta and Dr. Malolan Chetlur

- Scientific research on auto-alignment of lecture videos with slides, comments, and captions.

Microsoft Research, Bangalore, India 06/2011 – 08/2011
Visiting Researcher. Advisors: Dr. Bill Thies and Dr. Ed Cutrell

- Research on human computation supplemental work for low-income workers in India.

Microsoft Research, Bangalore, India 07/2009 – 05/2010
Research Intern. Advisors: Dr. Bill Thies and Dr. Kentaro Toyama

- Scientific research on biometric terminals for TB clinics in low-connectivity regions.

AWARDS AND HONORS

- Honorable Mention Award at ACM CHI 2021 for Understanding, Detecting and Mitigating the Effects of Coactivations in Ten-Finger Mid-Air Typing in Virtual Reality
- Honorable Mention Award at ACM CHI 2020 for PneuSleeve: In-fabric Multimodal Actuation and Sensing in a Soft, Compact, and Expressive Haptic Sleeve
- Honorable Mention Award at ACM CHI 2016 for Direct Manipulation in Tactile Displays
- Honorable Mention Award at ACM CHI 2016 for DualKey: Miniature Screen Text Entry via Finger Identification
- Robert E. Lansdale/Okino Computer Graphics Fellowship, 2016
- MITACS Globalink Research Award, 2016
- University of Toronto SGS Conference Grant, 2016
- Robert E. Lansdale/Okino Computer Graphics Fellowship, University of Toronto, 2014
- ICTD 2013 Full Scholarship, Capetown
- GRAND 2011 Travel Scholarship, Vancouver
- ICTD 2010 Full Scholarship, London
- Worldwide Winner, MultiPoint Education Award, Microsoft Imagine Cup 2009
- National Runners Up (India), Software Design, Microsoft Imagine Cup 2009

PUBLICATIONS

REFEREED PUBLICATIONS

C.35 Rahul Jain, Amit Goel, Koichiro Niinuma, **Aakar Gupta**. (2025) AdaptiveSliders: User-aligned Semantic Slider-based Editing of Text-to-Image Model Output. *Proceedings of the ACM Conference on Human Factors in Computing Systems - **CHI 2025**.*

C.34 Yi-Chi Liao, Ruta Desai, Alec M Pierce, Krista E Taylot, Hrvoje Benko, Tanya R Jonker, **Aakar Gupta**. (2024) A Meta-Bayesian Approach for Rapid Online Parametric Optimization for Wrist-based Interactions . *Proceedings of the ACM Conference on Human Factors in Computing Systems - **CHI 2024**.*

C.33 Taejun Kim, Amy Karlson, **Aakar Gupta**, Tovi Grossman, Jason Wu, Parastoo Abtahi, Christopher Collins, Michael Glueck, Hemant Bhaskar Surale. (2023) STAR: Smartphone-analogous Typing in Augmented Reality. *Proceedings of the ACM Conference on User Interface Software and Technology - **UIST 2023**.*

C.32 John J Dudley, Jingyao Zheng, **Aakar Gupta**, Hrvoje Benko, Matt Longest, Robert Wang, Per Ola Kristensson. (2023) Evaluating the performance of hand-based probabilistic text input methods on a mid-air virtual qwerty keyboard. *Proceedings of the IEEE Transactions on Visualization and Computer Graphics - **TVCG 2023**.*

C.31 Maozheng Zhao, Alec M Pierce, Ran Tan, Ting Zhang, Tianyi Wang, Tanya R. Jonker, Hrvoje Benko, **Aakar Gupta**. (2023) Gaze Speedup: Eye Gaze Assisted Gesture Typing in Virtual Reality. *Proceedings of the ACM Conference on Intelligent User Interfaces - **IUI 2023**.*

C.30 **Aakar Gupta**, Jess Hartcher-O-Brien, Evan Pezent, Naveen Sendhilnathan, Hrvoje Benko, Tanya R. Jonker. (2023) Investigating Eyes-away Mid-air Typing in Virtual Reality using Squeeze haptics-based Postural Reinforcement. *Proceedings of the ACM Conference on Human Factors in Computing Systems - **CHI 2023**.*

C.29 Jacqui Fashimpaur, Amy Karlson, Tanya R. Jonker, Hrvoje Benko, **Aakar Gupta**. (2023) Investigating Wrist Deflection Scrolling Techniques for Extended Reality. *Proceedings of the ACM Conference on Human Factors in Computing Systems - **CHI 2023**.*

C.28 Jess Hartcher-O'Brien, Vatsal Mehta, Nicholas Colonnese, **Aakar Gupta**, Carson J Bruns, Priyanshu Agarwal. (2023) Fingertip Wearable High-resolution Electrohydraulic Interface for Multimodal Haptics. *Proceedings of the 2023 IEEE World Haptics Conference - **WHC 2023**.*

C.27 Difeng Yu, Ruta Desai, Ting Zhang, Hrvoje Benko, Tanya R. Jonker, **Aakar Gupta**. (2022) Optimizing the Timing of Intelligent Suggestion in Virtual Reality. *Proceedings of the ACM Conference on User Interface Software and Technology - **UIST 2022**.*

C.26 Ting Zhang, Zhenhong Hu, **Aakar Gupta**, Chi-Hao Wu, Hrvoje Benko, Tanya R. Jonker. (2022) RIDS: Implicit Detection of a Selection Gesture Using Hand Motion Dynamics During Freehand Pointing in Virtual Reality *.Proceedings of the ACM Conference on User Interface Software and Technology - **UIST 2022**.*

C.25 Mustafa Doga Dogan, Ahmad Taka, Michael Lu, Yunyi Zhu, Akshat Kumar, Aakar Gupta, Stefanie Mueller. (2022) InfraredTags: Embedding Invisible AR Markers and Barcodes Using Low-Cost, Infrared-Based 3D Printing and Imaging Tools.*Proceedings of the ACM Conference on Human Factors in Computing Systems - **CHI 2022**.*

C.24 Antony Albert Raj Irudayaraj, Rishav Agarwal, Nikhita Joshi, **Aakar Gupta**, Omid Abari, and Daniel Vogel. (2021) PocketView: Through-Fabric Information Displays . *Proceedings of the ACM Conference on User Interface Software and Technology - **UIST 2021**.*

C.23 Farshid Salemi Parizi, Wolf Kienzle, Eric Whitmire, **Aakar Gupta**, and Hrvoje Benko. (2021) RotoWrist: Continuous Infrared Wrist Angle Tracking using a Wristband. *Proceedings of the ACM Symposium on Virtual Reality Software and Technology - **VRST 2021**.*

C.22 Elyse D. Z. Chase, Ali Israr, Pornthep Preechayasomboon, Sarah Sykes, **Aakar Gupta**, and Jessica Hartcher-O'Brien. (2021) Learning Vibes: Communication Bandwidth of a Single Wrist-Worn Vibrotactile Actuator. *In Proceedings of the IEEE World Haptics Conference - **WHC 2021**.*

C.21 Conor R Foy, John J Dudley, **Aakar Gupta**, Hrvoje Benko, and Per Ola Kristensson. (2021) Understanding, Detecting and Mitigating the Effects of Coactivations in Ten-Finger Mid-Air Typing in Virtual Reality. *Proceedings of the ACM Conference on Human Factors in Computing Systems - **CHI 2021**.* ***Honorable Mention Award***

C.20 **Aakar Gupta**, Majed Samad, Kenrick Kin, Per Ola Kristensson, and Hrvoje Benko. (2020) Investigating Remote Tactile Feedback for Mid-Air Text-Entry in Virtual Reality. *Proceedings of the IEEE International Symposium on Mixed and Augmented Reality - **ISMAR 2020**.*

C.19 Jun Gong, **Aakar Gupta**, and Hrvoje Benko. (2020) Acustico: Surface Tap Detection and Localization using Wrist-based Acoustic TDOA Sensing. *Proceedings of the ACM Conference on User Interface Software and Technology - **UIST 2020**.*

C.18 Jeremy Hartmann, **Aakar Gupta**, and Daniel Vogel. (2020) Extend, Push, Pull: Smartphone Mediated Interaction in Spatial Augmented Reality via Intuitive Mode Switching. *Proceedings of the ACM Conference on Spatial User Interaction - **SUI 2020**.*

C.17 **Aakar Gupta**, Borui Lin, Siyi Ji, Arjav Patel, and Daniel Vogel. (2020) Replicate and Reuse: Tangible Interaction Design for Digitally-Augmented Physical Media Objects. *Proceedings of the ACM Conference on Human Factors in Computing Systems - **CHI 2020**.*

C.16 Mengjia Zhu, Amirhossein H. Memar, **Aakar Gupta**, Majed Samad, Priyanshu Agarwal, Sean Keller, and Nick Colonnese. (2020) PneuSleeve: In-fabric Multimodal Actuation and Sensing in a Soft, Compact, and Expressive Haptic Sleeve. *Proceedings of the ACM Conference on Human Factors in Computing Systems - **CHI 2020**.*
Honorable Mention Award

C.15 Hui-Shyong Yeo, Juyoung Lee, Hyung-il Kim, **Aakar Gupta**, Andrea Bianchi, Daniel Vogel, Hideki Koike, Woontack Woo, Aaron Quigley. (2019) WRIST: Watch-Ring Interaction and Sensing Technique for Wrist Gestures and Macro-Micro Pointing. *Proceedings of the ACM Conference on Human-Computer Interaction with Mobile Devices and Services - **MobileHCI 2019**.*

C.14 **Aakar Gupta**, Cheng Ji, Hui-Shyong Yeo, Aaron Quigley, and Daniel Vogel. (2019) RotoSwype: Word-gesture Typing using a Ring. *Proceedings of the ACM Conference on Human Factors in Computing Systems - **CHI 2019**.*

C.13 Hemant B. Surale, **Aakar Gupta**, Mark Hancock, and Daniel Vogel. (2019) TabletInVR: Exploring the Design Space for Using a Multi-Touch Tablet in Virtual Reality. *Proceedings of the ACM Conference on Human Factors in Computing Systems - **CHI 2019**.*

C.12 **Aakar Gupta**, Jiushan Yang, Ravin Balakrishnan. (2018). Asterisk and Obelisk: Motion Codes for Passive Tagging. *Proceedings of the ACM Symposium on User Interface Software and Technology - **UIST 2018**.*

C.11 **Aakar Gupta**, Antony Irudayaraj, Ravin Balakrishnan. (2017). HapticClench: Investigating Squeeze Sensations using Memory Alloys. *Proceedings of the ACM Symposium on User Interface Software and Technology - **UIST 2017**.*

C.10 **Aakar Gupta**, Thomas Pietrzak, Cleon Yau, Nicolas Roussel, Ravin Balakrishnan. (2017). Summon and Select: Rapid Interaction with Interface Controls in Mid-air. *Proceedings of the ACM International Conference on Interactive Surfaces and Spaces - **ISS 2017**.*

C.9 **Aakar Gupta**, Muhammed Anwar, Ravin Balakrishnan. (2016). Porous Interfaces for Small Screen Multitasking using Finger Identification. *Proceedings of the ACM Symposium on User Interface Software and Technology - **UIST 2016**.*

C.8 **Aakar Gupta**, Antony Irudayaraj, Vimal Chandran, Goutham Palaniappan, Khai Truong, Ravin Balakrishnan. (2016). Haptic Learning of Semaphoric Finger Gestures. *Proceedings of the ACM Symposium on User Interface Software and Technology - **UIST 2016**.*

C.7 **Aakar Gupta**, Thomas Pietrzak, Nicolas Roussel and Ravin Balakrishnan. (2016) Direct Manipulation in Tactile Displays. *Proceedings of the ACM Conference on Human Factors in Computing Systems - **CHI 2016**.* ***Honorable Mention Award***

C.6 **Aakar Gupta** and Ravin Balakrishnan. (2016). DualKey: Miniature Screen Text Entry via Finger Identification. *Proceedings of the ACM Conference on Human Factors in Computing Systems - **CHI 2016**.* ****Honorable Mention Award****

C.5 **Aakar Gupta**. (2015). Five Years of IndiaHCI. *Proceedings of the ACM International Conference on Human-Computer Interaction - **IndiaHCI 2015**.*

C.4 **Aakar Gupta**, William Thies, Edward Cutrell and Ravin Balakrishnan. (2012). mClerk: Enabling Mobile Crowdsourcing in Developing Regions. *Proceedings of the ACM Conference on Human Factors in Computing Systems - **CHI 2012**.*

C.3 Nupur Bhatnagar, Abhishek Sinha, Navkar Samdaria, **Aakar Gupta**, Shelly Batra, Manish Bhardwaj and William Thies. (2012). Biometric Monitoring as a Persuasive Technology: Ensuring Patients Visit Health Centers in India's Slums. *Proceedings of the International conference on Persuasive Technology: design for health and safety - **Persuasive 2012**.*

C.2 Saurabh Panjwani, **Aakar Gupta**, Navkar Samdaria, Edward Cutrell and Kentaro Toyama. (2010). Collage: A Presentation Tool for the Developing-World School Teacher. *Proceedings of the ACM International Conference on Information and Communication Technologies and Development - **ICTD 2010**.*

C.1 **Aakar Gupta**, Milan Saini and Anish Mathuria. (2009). Security Analysis of the Louis Protocol for Location Privacy. *Proceedings of the IEEE International Conference on Communication Systems and Networks - **COMSNETS 2009***

PATENTS

- **System and Methods for Communicating recognition-model Uncertainty to the User.** Ting Zhang, **Aakar Gupta**, Marcello Giordano, Tanya Jonker, Hrvoje Benko. *US 20230056020 .*
- **Systems and methods for gaze-assisted gesture control.** Maozheng Zhao, **Aakar Gupta**, Ran Tan, Tanya Renee Jonker, Hrvoje Benko, Alec Pierce, Tianyi Wang. *US Patent App. 18/421,678.*
- **Wearable Device And User Input System With Active Sensing For Computing Devices And Artificial Reality Environments.** Jun Gong, **Aakar Gupta**, Hrvoje Benko. *US 11334157.*
- **Wearable Device And User Input System For Computing Devices And Artificial Reality Environments.** Jun Gong, **Aakar Gupta**, Hrvoje Benko. *US 11416075.*

- **Multimodal Kinematic Template Matching and Regression Modeling for Ray Pointing Prediction in Virtual Reality.** Rorik Henrikson, Tovi Samuel Grossman, Sean Edwin Trowbridge, Hrvoje Benko, Daniel John Wigdor, Marcello Giordano, Michael Glueck, Tanya Renee Jonker, **Aakar Gupta**, Stephanie Santosa, Carolina Brum Medeiros, Daniel Clarke. *US 20220129088A1.*
- **Scrolling and navigation in virtual reality** Jacqui Fashimpaur, **Aakar Gupta**, Tanya Renee Jonker. *US11726578B1.*
- **Spatially Offset Haptic Feedback. Aakar Gupta**, Majed Samad, Hrvoje Benko. *US 11132058.*
- **Device Data Personalization.** Malolan Chetlur, **Aakar Gupta**, Bikram Sengupta, Ashay U. Tamhane. *US9535958 B2.*

SKILLS

- **Skills:** Programming, Algorithms, Applied Machine Learning, Human Factors, Psychophysical Methods, Experiment Design, Quantitative and Qualitative Methods, Data Collection, Data Analysis, Statistical Inference, Basic Arduino and Signal Processing, Scientific Research.
- **Languages:** C#, Java, Python, C, C++, SQL, Unity
- **Data Tools:** SPSS, Python, Tableau

INVITED TALKS

- Multimodal Inference and Assistance for Effortless XR Interaction.
  University of Cambridge, London. February 2024.
- Multimodal Inference and Assistance for Effortless XR Interaction.
  University College London, London. February 2024.
- Leveraging Implicit User Information for Efficient AR/VR Interactions.
  University of Tokyo, Pittsburgh. October 2023.
- Leveraging Implicit User Information for Efficient AR/VR Interactions.
  Carnegie Mellon University, Pittsburgh. July 2023.
- Solving the Text Input problem in AR/VR.
  OffNote Labs, India. March 2021. (Remote Talk)
- Extending Human Expressivity for Ubiquitous and Immersive Computing Interactions.
  Apple Inc, Pittsburgh. April 2020. (Remote Talk)
- Extending Human Expressivity for Ubiquitous and Immersive Computing Interactions.
  Autodesk Research, Toronto. April 2020. (Remote Talk)
- Extending Human Expressivity for Ubiquitous and Immersive Computing Interactions.
  University of California, Santa Barbara. February 2020.
- Physical Interactions using Human Tactile and Kinesthetic Abilities.
  University of Calgary, Calgary. November 2018.
- Building Physical Interactions using Human Tactile and Kinesthetic Abilities.
  Facebook Reality Labs, Redmond. June 2018.
- Data-Driven Utilization of Human Capabilities for HCI.
  University of Edinburgh, Edinburgh. June 2018.

- Utilizing Human Capabilities for Designing Novel Interactions with Computers.
  Hong Kong University of Science and Technology (HKUST), Hong Kong. February 2018.

- Utilizing Human Capabilities for Designing Novel Interactions with Computers.
  University College London, London. January 2018.

- Touch Input, Touch Output and Touchless Interactions.
  Snap Research, Los Angeles. June 2017.

- Utilizing the Advanced Expressivity of Touch for Interactions.
  University of Waterloo, Waterloo. May 2017.

- Utilizing the Advanced Expressivity of Touch for Interactions.
  Autodesk Research, Toronto. December 2016.

- Finger-aware Interactions on Smartwatches.
  RIA Forum, University of Toronto, Toronto, March 2016.

- Ticketing Problems and a solution using Mobile Barcodes.
  Microsoft Research, Bangalore, India. January 2013.

- Mobile Crowdsourcing in Developing Regions.
  Xerox Research, Bangalore, India. June 2012.

- Mobile Crowdsourcing in Developing Regions.
  IBM Research, Bangalore, India. June 2012.

- Document Transcription using Mobile Crowdsourcing.
  GRAND 2011, Vancouver. May 2011.

- DISHA: Using Games for Health Awareness among kids.
  Microsoft Research, Bangalore, India. August 2009.

PRESS

- **"New Apps for the Bottom Billion"**. **MIT Technology Review**, May 7, 2012.

ADVISING

PHD STUDENTS

- Adil Rahman (Fujitsu Research America - Summer Intern 2024)
- Rahul Jain (Fujitsu Research America - Spring Intern 2024)
- Yi-Chi Liao (Meta Reality Labs Research - Summer Intern 2022)
- Maozheng Zhao (Meta Reality Labs Research - Summer Intern 2022) [C.30]
- Yiran Zhao Yu (Meta Reality Labs Research - Summer Intern 2022)
- Difeng Yu (Facebook Reality Labs - Summer Intern 2021) [C.19]
- Jun Gong (Facebook Reality Labs - Summer Intern 2019) [C.19]
- Hemant Surale (University of Waterloo - 2018) [C.13]
- Jeremy Hartmann (University of Waterloo - 2018) [C.18]

MASTERS STUDENTS

- Antony Albert Raj Irudayaraj (University of Toronto - Spring 2016, Spring 2017) [C.8, C.11]
- Vimal Chandran (University of Toronto - Spring 2016) [C.8]
- Goutham Palaniappan (University of Toronto - Spring 2016) [C.8]

UNDERGRADUATE STUDENTS

- Ningshan Ouyang (University of Waterloo - Fall 2018)
- Arjav Patel (University of Waterloo - Summer 2018) [C.17]
- Ariel Ji (University of Waterloo - Winter 2018) [C.17]
- Boris Lin (University of Waterloo - Winter 2018) [C.17]
- Cheng Ji (University of Waterloo - Winter 2018) [C.14]
- Christina Chung (University of Toronto - Summer 2017)
- Jiushan Yang (University of Toronto - Summer 2017) [C.12]
- Cleon Yau (University of Toronto - Spring 2017) [C.10]
- Muhammed Anwar (University of Toronto - Fall 2015-Spring 2016) [C.9]

SERVICE

- Associate Chair at ACM CHI 2025 in the "Interaction Techniques, Devices and Modalities" subcommittee.
- Associate Chair at ACM CHI 2024 in the "Interaction Techniques, Devices and Modalities" subcommittee.
- Associate Chair in the ACM UIST 2023 Program Committee.
- Associate Chair at ACM CHI 2023 in the "Computational Interaction" subcommittee.
- Associate Chair in the ACM UIST 2022 Program Committee.
- Associate Chair in the ACM UIST 2021 Program Committee.
- Associate Chair at ACM CHI 2021 in the "Interaction Techniques, Devices and Modalities" subcommittee.
- Associate Chair in the ACM UIST 2020 Program Committee.
- Associate Chair at ACM CHI 2020 in the "Interaction Techniques, Devices and Modalities" subcommittee.
- Associate Chair at ACM CHI 2019 in the "Interaction Techniques, Devices and Modalities" subcommittee.
- Program Committee member at ACM Interactive Surfaces and Spaces - ISS 2018.
- Posters Chair at ACM Interactive Surfaces and Spaces - ISS 2018.
- Associate Chair at ACM CHI 2018 in the "Interaction Techniques, Devices and Modalities" subcommittee.
- Program Committee member at ACM Interactive Surfaces and Spaces - ISS 2018.
- SV (Student Volunteer) Chair at ACM Interactive Surfaces and Spaces - ISS 2017.

- Program Committee member at ACM IndiaHCI 2016.
- Reviewer for TOCHI 2018, CHI 2013-2017, UIST 2015-2018, Ubicomp 2016, ISS 2017, TEI 2017, MobileHCI 2016, IndiaHCI 2015.
- Workshop Organizer "MultiPoint Mouse Learning" for NCERT (National Council of Educational Research and Training), India. May 2009.

TEACHING EXPERIENCE

COURSE INSTRUCTOR

- "CS230: Introduction to Computers and Computer Systems". University of Waterloo. Summer 2018.

COURSE GUEST LECTURES

- "Statistical Methods in HCI". University of Toronto. Nov 2017.
  CSC428: Human-Computer Interaction. Instructor: Prof. Khai Truong
- "Designing Technologies for the Developing World". University of Toronto. Spring 2011.
  CSC318: Design of Interactive Computational Media. Instructor: Dr. Mike Massimi

TEACHING ASSISTANT

- CSC428: Human-Computer Interaction. University of Toronto. Spring 2017, Fall 2016, Spring 2016, Fall 2015, Fall 2014.
- CSC343: Introduction to Databases. University of Toronto. Summer 2017, Summer 2015, Spring 2011.
- CSC318: Design of Interactive Computational Media. University of Toronto. Fall 2014.
- BIG102: Internet: Saving Civilization or Trashing the Planet? University of Toronto. Spring 2014, Fall 2013.
- CSC108: Introduction to Computer Programming. University of Toronto. Summer 2013.
- CSC263: Data Structures and Analysis. University of Toronto. Spring 2013.
- CSC192: Data Structures and Algorithms. University of Toronto. Fall 2011.
- CSC209: Software Tools and Systems Programming. University of Toronto. Fall 2010.
- IT215: Systems Software. DAIICT. Spring 2009.
- EL103: Basic Electronic Circuits. DAIICT. Fall 2008.