Shariff Faleel

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Summary

Primary research interest is in augmenting human cognition. I am particularly interested in using state-of-the-art artificial intelligence technologies with ubiquitous computing to expand the human day-to-day experience.

Technical Skills

Programming & Tools

python, C#, Javascript, Lisp	●●●●●	C++, Java	●●●●○
Rust	●●○○○	Unity (AR/VR/Mobile)	●●●●●
Android	●●●●○		

AI Tools

Data analysis	●●●●●	Deep Leaning (CV, NLP)	●●●●●
MLOps	●●●○○		

Miscellaneous

Cloud platforms (aws, gcloud)	●●●○○	Database (mongodb, firebase)	●●●○○
Embedded systems	●●●○○		

Soft Skills

Teamwork	●●●●●	Communication	●●●●●
Presentation	●●●●●	Technical writing	●●●●●
Leadership	●●●●●		

Work & Research Experience

March 2021 - April 2022 — **Associate Researcher, Intern**
Huawei Technologies Canada

- Was part of the Human Machine Interactions lab. Worked on a range of HCI projects.
- Developed research ideas, executed relevant user studies and built demo applications.
- Produced a paper on typing on virtual keyboards (Accepcted at CHI '23).

August 2019 - Present — **PhD Candidate**
University of British Columbia - Okanagan

- Under the supervision of Prof. Pourang Irani.
- Exploring AR/VR input and output capabilities. Developed Hand Proximate UI as a novel interaction modality for AR/VR.
  - Technologies Explored: Deep learning models (CV), Gesture-based interactions (Leap Motion, Vicon motion tracking, CV), VR/AR (Oculus, Epson & Hololens using Unity, Android & Python)
- Was instructor for a graduate level course on introducing designing immersive applications for VR & AR.

July 2017 - August 2019 — **Research Assistant**
University of Peradeniya

- Under the supervision of Dr. R.D. Nawarathna.
- Conducted research on deep-learning based computer vision applications as part of a collaboration with codegen international.
- Developed a prototype system for a cashier assistant:
  - Tools/framworks used: NVIDIA Jetson, Raspberry Pi, Python, pytorch, django, AWS Lambda, AWS Beanstalk, MongoDB.
  - Framework developed for automated ML experimenting, training and deployment.

March 2017 - June 2017 — **Temporary Demonstrator**
University of Peradeniya

- Conducted practical sessions (Programming concepts, Data structures and algorithms, Computer architecture/assembly) for undergraduate students.
- Technical committee member of the Postgraduate Institute of Science Research Congress, 2017.
- Researched Dialogue Management systems.

August 2016 - January 2016 **Software Engineering Intern**
IFS R&D International

- Developed dependency visualization of system modules. Using Common Lisp, Python, and Javascript.

Education

September 2019 - Present **PhD (Computer Science)**
University of Britsh Columbia - Okanagan
• Supervisor - Prof. Pourang Irani • GPA: 4.25/4.5

March 2013 - December 2016 **BSc (Computer Science)**
University of Peradeniya
• Major: Computer Science • Minor: Statistics & Mathematics
• GPA: 3.5/4.0 (87%) (Second Class Honours - Upper Division)

Publications

Francisco Perella-Holfeld, **Shariff AM Faleel**, Pourang Irani. (2023) "Evaluating design guidelines for hand proximate in-situ user interfaces". (In submission at DIS 2023)

Fouad Alallah, **Shariff AM Faleel**, Yumiko Sakamoto, Bradley Rey, and Pourang Irani. (2023) "Evaluation of Situated Space-time Cube Analytics for In-situ Data Exploration". (In submission at Information Visualization)

Shariff AM Faleel, Yishuo Liu, Roya A Cody, Bradley Rey, Linghao Du, Jiangyue Yu, Da-Yuan Huang, Pourang Irani, Wei Li. (2023) "T-Force: Exploring the Use of Typing Force for Three State Virtual Keyboards". (Accepted at CHI 2023)

Ali Neshati, Aaron Salo, **Shariff AM Faleel**, Ziming Li, Hai-Ning Liang, Celine Latulipe, and Pourang Irani. 2022. "EdgeSelect: Smartwatch Data Interaction with Minimal Screen Occlusion." In Proceedings of the 2022 International Conference on Multimodal Interaction (ICMI '22). Association for Computing Machinery, New York, NY, USA, 288–298. https://doi.org/10.1145/3536221.3556586

Fouad Alallah, **Shariff AM Faleel**, Yumiko Sakamoto, Bradley Rey, and Pourang Irani (2022). "SSCA: situated space-time cube analytics." In M. Agus, W. Aigner, and T. Hoellt, EuroVis 2022 - Short Papers (pp.). : The Eurographics Association. https://doi.org/10.2312/evs.20221088

Shariff AM Faleel, Michael Gammon, Kevin Fan, Da-Yuan Huang, Wei Li and Pourang Irani, "HPUI: Hand Proximate User Interfaces for One-Handed Interactions on Head Mounted Displays," in IEEE Transactions on Visualization and Computer Graphics, vol. 27, no. 11, pp. 4215-4225, Nov. 2021, https://doi.org/10.1109/TVCG.2021.3106493.

Shariff AM Faleel, Bibhushan Raj Joshi and Bradley Rey, "Writely: Force Feedback for Non-Dominant Hand Writing Training," 2021 IEEE World Haptics Conference (WHC), 2021, pp. 340-340, https://doi.org/10.1109/WHC49131.2021.9517209.

Ali Neshati, Bradley Rey, **Ahmed Shariff Mohommed Faleel**, Sandra Bardot, Celine Latulipe, and Pourang Irani. 2021. "BezelGlide: Interacting with Graphs on Smartwatches with Minimal Screen Occlusion". In Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems (CHI '21). Association for Computing Machinery, New York, NY, USA, Article 501, 1–13. https://doi.org/10.1145/3411764.3445201

Shariff A. M. Faleel, Michael Gammon, Yumiko Sakamoto, Carlo Menon, and Pourang Irani. 2020. "User gesture elicitation of common smartphone tasks for hand proximate user interfaces". In *Proceedings of the 11th Augmented Human International Conference (AH '20)*. Association for Computing Machinery, New York, NY, USA, Article 6, 1–8. https://doi.org/10.1145/3396339.3396363

Yurii Vasylkiv, Ali Neshati, **Shariff A. M. Faleel**, Yumiko Sakamoto, and Pourang Irani. 2020. "Using guessability framework: age-related differences in hand gesture interaction". In *Proceedings of the 11th Augmented Human International Conference (AH '20)*. ACM, New York, NY, USA, Article 24, 1–2. https://doi.org/10.1145/3396339.3396394

Ahmed Shariff, M.F., Nawarathna, R.D. (2019). "A Novel Dialogue Manager Model for Spoken Dialogue Systems Based on User Input Learning." In: Hemanth, J., Silva, T., Karunananda, A. (eds) Artificial Intelligence. SLAAI-ICAI 2018. Communications in Computer and Information Science, vol 890. Springer, Singapore. https://doi.org/10.1007/978-981-13-9129-3_14

M.F.A. Shariff. and R.D. Nawarathna, "A Dialogue Management Model with User Input Learning." Proceedings of the Postgraduate Institute of Science Research Congress 2017. (Abstract)