Vikram Kamath Cannanure

POSTDOCTORAL FELLOW - SAARLAND UNIVERSITY · HCI, ICTD, AI, EDUCATION

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I am a postdoctoral fellow at Saarland University, researching the role of AI in supporting marginalized audiences in the Global South. I completed my PhD at Carnegie Mellon University, specializing in Human-Computer Interaction (HCI) and Information Technology and Development (ICTD). My thesis focused on developing a chatbot to support professional development for primary teachers in rural Côte d'Ivoire. My system was used by over 400 teachers and impacted over 10,000 students. I have worked on projects in Côte d'Ivoire, Rwanda, the US, Macau, Germany and India. My work has been published in top-tier HCI conferences. In addition to research, I co-led "HCI Across Borders," workshop for junior researchers from different geographies for over 5 years, mentored over 20 students and reviewed over 40 papers in HCI.

Education

Carnegie Mellon University *Pittsburgh, USA*
PhD, HUMAN-COMPUTER INTERACTION *2017– Aug 2023*
- Advisors: Prof. Tim Brown and Prof. Amy Ogan
- Committee: Prof. Chinmay Kulkarni, Prof. Mayank Goel, and Prof. Kentaro Toyama (University of Michigan)
- Thesis: DIA: Supporting Teacher Professional Development in Low Infrastructure Settings
- Research involved field work and technology deployment in rural Côte d'Ivoire

Carnegie Mellon University *Pittsburgh, USA*
MASTERS, HUMAN-COMPUTER INTERACTION *2017–2021*

Carnegie Mellon University *Pittsburgh, USA*
MASTERS, EDUCATIONAL TECHNOLOGY AND APPLIED LEARNING SCIENCE *2014–2015*

National Institute of Technology Karnataka *Karnataka, India*
BACHELOR OF TECHNOLOGY, MECHANICAL ENGINEERING *2007–2011*

Research Experience

Saarland University *Saarbrücken, Germany*
POSTDOCTORAL FELLOW *October 2023 – present*
- Advisor: Prof. Ingmar Weber
- Supervising PhD students on projects related to HCI4D and NLP
- Exploring the role of Generative AI for various projects in the Global South

Carnegie Mellon University, Africa *Kigali, Rwanda*
VISITING RESEARCHER *Summer 2018, Summer 2019, Fall 2020*
- Host: Prof. Tim Brown
- Project: Design of a Phone Call-Based Health Information System
- Conducted participatory research with rural women and prototyped an IVR system in rural Rwanda

United Nations University Computing and Society *Macau, SAR, China*
RESEARCH INTERN *July 2017 – Sept 2017*
- Advisor: Dr. Mamello Thinayne
- Conducted participatory design with a local NGO
- Built a mobile app to report and monitor homelessness in Macau

Carnegie Mellon University *Pittsburgh, USA*
RESEARCH ASSISTANT *Aug. 2015 - June. 2017*
- Advisor: Prof. Jen Mankoff
- Longitudinal eating detection: deployed and evaluated the system to 12 users in the field
- Twist n Knock: A one-handed Gesture for smart watches: publication at GI 2016 [C1]
- EDigs: Built and maintained the APIs for apartment hunting website in Pittsburgh [C3]

Awards

2023   **SIGCHI Development grant**, HCIxB Workshop at CHI - 8000 USD

2019   **PhD Fellowship**, Center for Machine Learning and Health - 100,000 USD   *Pittsburgh PA*

2019   **Best Paper Award**, ACM COMPASS Paper   *Accra, Ghana*

2019   **Poster Spotlight**, ACM COMPASS Poster   *Accra, Ghana*

Selected Publications

For full list see https://scholar.google.com/citations?user=HVuuUzwAAAAJ

[11]   **Cannanure V.K.**, Ngoon T., Wolf S., Jasinska K., Brown T., Ogan A. *Understanding the Longitudinal Impacts of a Chatbot to Facilitate a Virtual Community of Practice for Teachers in rural Côte d'Ivoire.* ACM COMPASS 2024, Delhi, India.

[10]   Ngoon T., **Cannanure V.K.**, Wolf S., Jasinska K., Brown T., Ogan A. *"I believe I did not preach into the desert": Opportunities & Challenges in Scaling Teacher Mentorship through Mobile Technology in Rural Côte d'Ivoire.* L@Scale 2024, Atlanta, USA.

[9]   **Cannanure V.K.**, Ávila E., Ngoon T., Adji Y. , Wolf S., Jasinska K., Brown T., Ogan A. *"We dream of climbing the ladder, for getting there, we have to do our job better": Designing for Teacher Aspirations in rural Côte d'Ivoire.* ACM COMPASS 2022, Seattle, USA.

[8]   **Cannanure V.K.**, Brown T., Ogan A. *DIA: A Human AI Hybrid Chatbot for Low Resource Contexts.* ICTD 2020, Guayaquil, Ecuador

[7]   **Cannanure V.K.**, Souvenir J., Adji Y. , Apke H., Jasinska K., Brown T., Ogan A. *"I'm fine where I am, but I want to do more": Exploring Teacher Aspirations in Rural Cote D'Ivoire.* ACM COMPASS 2020, Guayaquil, Ecuador

[6]   Madaio, M., Yarzebinski, E., **Cannanure V.K.**, Zinszer B., Seri, A., Tanoh, F., Hannon-Cropp, J., Cassell, J., Jasinska, K., Ogan, A. *Collective Support and Independent Learning with a Voice-Based Literacy Technology in Rural Communities.* CHI '20, Apr 2020, Hawaii, USA

[5]   Madaio, M., **Cannanure V.K.**, Yarzebinski, E., Zasacky, S., Tanoh, F., Hannon-Cropp, J., Cassell, J., Jasinska, K., Ogan, A. *"You Give a Little of Yourself": Family Support for Children's Use of an IVR Literacy System.* COMPASS '19, Jun 2019, Accra, Ghana

[4]   **Cannanure V.K.**, Brown T, *RASP-IVR: A Low Cost Interactive Voice Response System.* AfriCHI '18, December 2018, Windhoek, Namibia.

[3]   Onafuwa, D., Early, K., Vyas N, **Cannanure V.K.**, Mankoff J. *Understanding the Information Needs of Prospective Tenants.* ACM SIGCAS Conference on Computing and Sustainable Societies (COMPASS 2018), June 2018, San Francisco, USA.

[2]   Bhat, K.*, Thinayane M.*, Goldkind L., **Cannanure V.K.** *Critical Participatory Design: Reflections on engagement and empowerment in a case of a Community Based Organization.* Participatory Design Conference (PDC 2018), August 2018, Hasselt and Genk, Belgium.

[1]   **Cannanure V.K.**, Chen, X., Mankoff J., *Twist and Knock A One-Handed Gesture for Smart Watches.* Proceedings of the 42nd Graphics Interface Conference (GI 2016)

Teaching Experience

Programming Usable Interfaces (05-430/05630)

TEACHING ASSISTANT. INSTRUCTOR: SCOTT HUDSON   *Spring 2022*

Carnegie Mellon University

User-Centered Research & Evaluation (05-410/05-610)

TEACHING ASSISTANT. INSTRUCTOR: RAELIN MUSURACA   *Spring 2021*

Carnegie Mellon University

Professional Service

2024	**Lead Organizer**, HCI Across Borders (HCIxB) workshop at ACM COMPASS	*Delhi, India*
2023	**Lead Organizer**, HCI Across Borders (HCIxB) workshop at CHI	*Hamburg, Germany*
2022	**Lead Organizer**, HCI Across Borders (HCIxB) workshop at CHI	*New Orleans, USA*
2021	**Lead Organizer**, HCI Across Borders (HCIxB) workshop at CHI	*Yokohama, Japan*
2020	**Organizer**, HCI Across Borders (HCIxB) symposium at CHI	*Hawaii, USA*
2019	**Organizer**, HCI Across Borders (HCIxB) symposium at CHI	*Glasgow, UK*
2019	**Organizer**, Young Researchers reception ICTDx	*Ahmedabad*
2020-22	**SIGCHI Development Fund**, Executive Committee	
2020-	**AC**, CHI 22 (extended abstract), CHI 21 (extended abstract), CHI 20 (extended abstract)	
2018-	**Reviewer**, ACM COMPASS 2021, CSCW 2021, CHI 2021, CHI 21 (case studies), CSCW 20, CHI 20 (case studies), CHI 19, HCIxB 2019, DIS 18 (WiP), PDC 18(Notes)	

Mentoring

PhD

Ethel Mensa: Saarland University, PhD : *Exploring structural inequality in Germany using POI data*
Hamayoon Behmanush: Saarland University, PhD : *Supporting Afghan women learn programming*

Masters

Divya Mani Adhikari: Saarland University, MS 2024: *Automated Survey Testing using LLMs*
Prithika Acharya: CMU Pittsburgh, METALS 2022: *Teacher Training Project in Ivory Coast*
Aastha Patel: CMU Pittsburgh, METALS 2022: *Teacher Training Project in Ivory Coast*
Egide Kamuzinzi: CMU Rwanda, MSIT 2021: *Teacher Training Project in Ivory Coast*
Baptiste Moreau-Pernet: CMU Pittsburgh, METALS 2021: *Teacher Training Project in Ivory Coast*
Saumya Sharma: CMU Pittsburgh, MSIIPM 2020: *Simple Health Information System*
Lucie Uwimpaye: CMU Africa, MSIT 2021: *Simple Health Information System*
Eloísa Ávila: CMU Pittsburgh, MSPPM 2021: *Teacher Training Project in Ivory Coast*
Sheila Mbadi: CMU Africa, MSIT 2021: *Simple Health Information System*
Patrick Manirakiza: CMU Africa, MSECE 2019: *MnE system for Rwanda Women's Network*
Solange Iyubu:CMU Africa, MSECE 2019: *MnE system for Rwanda Women's Network*
Sabin Sheja: CMU Africa, MSECE 2019: *MnE system for Rwanda Women's Network*
Justin Bigwi: CMU Africa, MSECE 2019: *Design of a Phone Call-Based Health Information System*
Gloria Umutesi: CMU Africa, MSECE 2020: *Design of a Phone Call-Based Health Information System*
Jocelyne Mukamisha CMU Africa, MSIT 2020: *Design of a Phone Call-Based Health Information System*
Justin Souvenir Niweteto: CMU Africa, MSIT 2020: *Design of a Phone Call-Based Health Information System*
Fraterne Kagame CMU Africa, MSIT 2020: *Design of a Phone Call-Based Health Information System*
Huguette Ingenere: CMU Africa, MSIT 2020: *French Interview Transcription for teachers in Cote d'Ivoire*
Marie Claudine Ingenere: CMU Africa, MSIT 2020: *French Interview Transcription for teachers in Cote d'Ivoire*
Nebiyou Yismaw: CMU Africa, MSECE 2018: *Digital and Voice based Systems to support GBV*
Fabiola Uwashema: CMU Africa, MSIT 2018: *Digital and Voice based Systems to support GBV*

Undergraduate

Riti Verma: Indian Institute of Technology, Delhi: *Exploring the role of AI in the Global South*
Lena Armstrong: University of Pennsylvania, Summer REU: *Teacher Training Project in Ivory Coast*
Maya Greenholt: CMU Pittsburgh, Cognitive Science: *Teacher Training Project in Ivory Coast*

Skills

Programming	Python, PHP, HTML/CSS, JavaScript, Android, Arduino, iOS
Technologies	Pandas, Scikit, Weka, NumPy, AngularJS, Three.js, Bootstrap, MySQL, MongoDB, Redis, WebSockets
Coursework	Applied Fabrication, Applied Machine Learning, Data Pipeline, Gadgets Activity and Recognition in HCI, Education Goals, E-Learning Design Principles, Game Design Studio, Design of Educational Games

Selected Press

The Next Web *TeliportMe introduces 3D effects to its 360-degree panoramic app for Android*
Techcrunch *Test Flighting: Applover Launches Free, Crowdsourced Testing Platform for Android Apps*
Robert Scoble *Developers: crowd-source your testing of Android phones*
CMU *A new online resource from Carnegie Mellon University seeks to help people find the perfect rental*
HCII *EDigs Helps Apartment Hunters Find the Perfect Rental*
TheBetterIndia *How a National Level Cyclist Is Fighting Both Spinal Injury & Poverty with Inspiring Confidence*
Milaap Blog *Getting Back to Cycling: A National Medalist's Dream*

Professional Experience

Carnegie Mellon University   *Pittsburgh, USA*

SENIOR WEB DEVELOPER   *July 2015 – June 2017*

- Advisor: Prof. Geoff Gordon
- Built and managed educational technology to support online learning
- Prototyping low cost video recording system for teaching courses

TeliportMe Inc: Indian startup   *Karnataka, IN*

WEB ARCHITECT   *Jul 2011- Aug 2014*

- Engineered APIs for Android, iOS, Web and Google Glass
- Scaled back-end to handle 4 million users and mange 100K locations
- Designed 3D viewer on par with Google street view
- Managed 10 Ubuntu machines with MySQL and Redis replication

Other

- **Philanthropy** I have raised over $20,000 for charity for various causes in India
- **Android** I have deployed 3 apps to the app store and have around 10,000 active users
- **Web** I have deployed over 20 websites to production. My best project has reached over 4 million users.
- **Teaching** I teach children a second language(Kannada) at the S.V. Temple in Pittsburgh
- **Swimming** I swam 10 miles from Elephanta Caves to Gateway of India to raise money for acid attack victims