

# SENJUTI DUTTA, PhD STUDENT

Electrical Engineering and Computer Science Department

University of Tennessee, Knoxville

# CURRICULUM VITAE

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<b>RESEARCH STATEMENT</b>	My research focuses on designing, engineering, and studying interactive systems in crowd-work that support crowdworkers in enabling flexibility in their work. I employ quantitative and qualitative methods to conduct and publish research on these systems. I specialize in human-computer interaction, machine learning, and ubiquitous computing.
<b>EDUCATION</b>	<p><b>University of Tennessee, Knoxville, TN, USA</b> <span style="float: right;"><i>2020 – Present</i></span> <i>Doctorate of Philosophy (Ph.D)</i>, Computer Science Advisor: Dr. Scott Ruoti</p> <p><b>University of Memphis, Memphis, TN, USA</b> <span style="float: right;"><i>2017 - 2020</i></span> <i>Master's of Science (MS)</i>, Computer Science Thesis: <i>Enabling Efficient and Privacy-Preserving Task Matching</i> Advisor: Dr. Kan Yang</p> <p><b>Maulana Abdul Kalam Azad University of Technology, West Bengal, India</b> <span style="float: right;"><i>2012 - 2016</i></span> <i>Bachelor's of Computer Science and Engineering (BS)</i>, Computer Science</p>
<b>RESEARCH EXPERIENCE</b>	<p><b>Google</b> <span style="float: right;"><i>August 2022 - May 2023</i></span> <i>Student Researcher</i> <i>with:</i> Ravi Rajakumar (Jan 2023 - May 2023) Praveen Paritosh (August 2022- Dec 2022)<ul style="list-style-type: none"><li>Investigating and understanding subjectivity</li></ul></p> <p><b>University of Tennessee, Knoxville, TN, USA</b> <span style="float: right;"><i>December 2021 - Present</i></span> Member, USER Lab<ul style="list-style-type: none"><li>Conducted quantitative as well as qualitative analysis of practices of crowdworkers using different devices</li><li>Analyzed the responses of practices of crowdworkers</li><li>ML analysis to find out different type of crowdworkers</li></ul></p> <p><b>University of Tennessee, Knoxville, TN, USA</b> <span style="float: right;"><i>Fall 2020 - December 2021</i></span> <i>Research Assistant</i>, People, Agents, Interactions, and Systems<ul style="list-style-type: none"><li>Conducted qualitative analysis of mobile HIT characteristics.</li><li>Developed a taxonomy of mobile HIT characteristics.</li><li>Analyzed the mobility of HITs using the developed taxonomy.</li></ul></p> <p><b>University of Memphis, Memphis, TN, USA</b> <span style="float: right;"><i>Fall 2018- Summer 2020</i></span> <i>Research Assistant</i>, Dept. of Computer Science <i>with:</i> Dr. Kan Yang<ul style="list-style-type: none"><li>Engineered privacy-preserving keyword-matching scheme for crowdsourcing systems.</li></ul></p> <p><b>University of Memphis, Memphis, TN, USA</b> <span style="float: right;"><i>Fall 2017, Summer 2018</i></span> <i>Research Assistant</i>, Dept. of Computer Science <i>with:</i> Dr. Dipankar Dasgupta<ul style="list-style-type: none"><li>Designed and implemented algorithms for converting morphed and normal images.</li><li>Designed and implemented approach for simulating dataset of 70,000 images.</li><li>Developed multi-factor authorization and authentication instructional courses.</li></ul></p>

Jadavpur University, West Bengal, India Spring 2017, Summer 2017  
*App Developer Intern*, Center for Studies and Rehabilitation of Differently Abled Persons  
with: Mridul Sankar Barik

- Developed Android app for determining user location and orientation.
- Designed and implemented audio instructions for people with visual impairments.

## TEACHING EXPERIENCE

**Lab Instructor**  
**DATA 201: Data Knowledge and Discovery**, University of Tennessee, Knoxville Spring 2022  
with: Dr. Alex Bentley  
Helps students in their python assignment and lead a python lab.

**Teaching Assistant**  
**COSC 522: Machine Learning**, University of Tennessee, Knoxville Fall 2021  
with: Hairong Qi.  
Graded homework and projects related to foundational machine learning concepts.

**ECE 462: Cyber-Physical Systems Security**, University of Tennessee, Knoxville Spring 2021  
with: Qing Charles Cao. Spring 2022  
Graded assignments and exams related to cyber-physical concepts.

**COMP 2150: Object Oriented Programming**, University of Memphis Fall 2018, Spring 2019  
with: Dr. James Yu  
Graded assignments related to Object Oriented Programming and Data Structures.

**COMP 7115: Database Systems**, University of Memphis Fall 2019  
with: Dr. Fatih Sen  
Taught classes, graded assignments, and mentored students in final course projects.

**COMP 4001/6001: Introduction to Python Programming**, University of Memphis Fall 2019  
with: Dr. William Baggett Spring 2020  
Graded assignments, quizzes, and exams related to Python.

## PUBLICATIONS

### Under Progress

- [UP.1] S. Dutta, S.Ruoti, R.Linder, A. Williams, A. Kuzminykh, . The Many Faces of Mobility in Crowdwork: Understanding Current and Desired Work Practices Across Non-workstation Devices (*Under Progress*).
- [UP.2] S. Dutta, S.Ruoti, R.Linder, A. Williams, A. Kuzminykh, Understanding different type of workers using ML models (*Under Progress*).

### Peer-Reviewed Conference Papers

- [C.1] Dutta, S., Linder, R., Lowe, D., Rosenbalm, R., Kuzminykh, A., Williams, A. C. (2022, April). Mobilizing crowdwork: A systematic assessment of the mobile usability of hits. In CHI Conference on Human Factors in Computing Systems (pp. 1-20).
- [C.2] Linder, R., Hunter, C., McLemore, J., Dutta, S., Akbar, F., Grover, T., ... Williams, A. C. (2022). Characterizing Work-Life for Information Work on Mars: A Design Fiction for the New Future of Work on Earth. Proceedings of the ACM on Human-Computer Interaction, 6 (GROUP), 1-27.
- [C.3] Yang, K., Dutta, S. (2021, June). Secure and Efficient Task Matching with Multi-keyword in Multi-requester and Multi-worker Crowdsourcing. In 2021 IEEE/ACM 29th International Symposium on Quality of Service (IWQOS) (pp. 1-6). IEEE.
- [C.4] Dutta, S., Barik, M. S., Chowdhury, C., Gupta, D. (2018, January). Divya-Dristi: A smartphone based campus navigation system for the visually impaired. In 2018 Fifth International Conference on Emerging Applications of Information Technology (EAIT) (pp. 1-3). IEEE.

### Peer-Reviewed Workshop Papers

[W.1] S. Dutta, R. Linder, D. Lowe, M. Rosenbalm, A. Kuzminykh, and A. Williams. The Productivity Paradox: Understanding Tooling Biases in Crowdfwork (*CSCW 21 Workshop - Investigating and Mitigating Biases in Crowdsourced Data.*)

[W.2] S. Dutta, R. Linder, A. Kuzminykh, and A. Williams. Doing Work from Where You Are: AI HIT Management Dispatching Work Tailored to Context (*Accepted at the CHI 22 Crowd Science Workshop.*)

#### Peer-Reviewed Posters

[P.1] S. Dutta, R. Linder, S. Ruoti, A. Williams and A. Kuzminykh. Beyond a One-Size-Fits-All Approach: Towards Personalizing Multi-device Setups in Crowdfwork (*Accepted at the UbiComp/ISWC '22.*)

#### SKILLS

<b>Programming Languages</b>	Python, C, C++, JavaScript, Java, HTML, SQL
<b>Shell Scripting Language</b>	Bash, Sh, Python, Powershell, MSDOS, PHP
<b>ML Library</b>	PyTorch, Keras, NumPy, Pandas, Scikit-Learn, TensorFlow
<b>Quantitative Tooling</b>	Pandas, R, Matplotlib, Seaborn
<b>Qualitative Tooling</b>	nVivo, Qualtrics, SurveyMonkey
<b>Experimental Design</b>	Crowdsourced Studies, Online Surveys, Lab Studies
<b>Productivity Tool</b>	Google Docs, Slides, Sheets, Microsoft Word, Excel, PowerPoint.
<b>Design Software</b>	Sketch, MockFlow, Adobe Creative Suite, Miro
<b>Statistical Software</b>	OpenStat, Scipy

#### COMMUNITY SERVICES

<b>Reviewer</b>	Globecom, IEEE Mass, IEEE CISS Symposium, DIS
<b>Student Vounteer</b>	CSCW 2021, HCOMP 2021

#### REFERENCES

**Scott Ruoti**, PhD Supervisor  
*Assistant Professor*, EECS, University of Tennessee, Knoxville  
*Email*: ruoti@utk.edu

**Anastasia Kuzminykh**, PhD Committee Member  
*Assistant Professor*, iSchool, University of Toronto  
*Email*: anastasia.kuzminykh@utoronto.ca

**Alex Williams**, PhD Committee Member  
*Applied Scientist*, Amazon  
*Email*: acwio@amazon.com

**Rhema Linder**, Collaborator  
*Lecturer*, University of Tennessee, Knoxville  
*Email*: rlinder@utk.edu

**Ravi Rajakumar**, Manager  
*Software Engineer*, Google  
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**Praveen Paritosh**, Manager  
*Research Scientist*  
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**Alex Bentley**, Instructor DATA 201  
*Instructor*, Department of Anthropology, University of Tennessee, Knoxville  
*Email*: rabentley@utk.edu

**Kan Yang**, MS Supervisor  
*Assistant Professor*, Computer Science, University of Memphis, Memphis  
*Email*: kan.yang@memphis.edu