

# Charan Pushpanathan Prabavathi

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Homepage: <https://charanpushpanathan.com>

## Research Interests

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Human-Computer Interaction, Qualitative Methods, Philosophy of Artificial Intelligence, Learning Science.

## Education

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**University of Illinois Urbana-Champaign (UIUC)**, Champaign, IL 2030

*Ph.D. in Information Sciences*

Advisor: [Michael B. Twidale](#)

School of Information Sciences

**Pennsylvania State University (University Park)**, State College, PA Aug 23 - May 25

*M.S., Informatics (Conc. Human-Computer Interaction)*; GPA: 3.97/4.0

Advisor: [John M. Carroll](#)

College of Information Sciences and Technology

**Scholarly Paper:** Synergies and Reciprocity in Co-parenting Interactions.

**Kumaraguru College of Technology**, Coimbatore, India Aug 19 - May 23

*B.Eng., Computer Science and Engineering*; GPA: 8.12/10.0

Department of Computer Science and Engineering

## Research Experience

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**Collaboration Innovation Laboratory**, State College, PA Dec 23 - May 25

*Graduate Research Assistant*

Advisor: [John M. Carroll](#)

College of Information Sciences and Technology, Pennsylvania State University

- Conducted **co-design studies and scenario-based design** with new parents to design a co-parenting support system.
- Integrated **emotional-awareness, validation, and playfulness** features to enhance synergies, reciprocity, and closeness in family interactions.
- Produced research outputs including a DIS'25 submission.

## Selected Publications

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### Conference Papers

1. **Parental Collaboration and Closeness: Envisioning with New Couple Parents.**

*Proceedings of the 2025 ACM Designing Interactive Systems Conference*

Ya-Fang Lin, Xiaotian Li, Wan-Hsuan Huang, **Charan Pushpanathan Prabavathi**, Jie Cai, John M Carroll

## Works in Progress & Manuscripts

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**Artificial Intelligence “for the Birds”**

*Monograph (In Preparation)*

**Charan Pushpanathan Prabavathi** and Michael B. Twidale.

A book-length criticisms a refutation against field.

## Academic Writing as Human-Computer Activity: A Scoping Review *Revision*

*Under*

Charan Pushpanathan Prabavathi, Joy Phang, and Michael B. Twidale.  
PRISMA-ScR of academic writing-support tools in HCI.

### 0.1 Stalled

#### 1. A Collaborative System to Augment Co-parenting Closeness.

*Manuscript in preparation, 2025*

Charan Pushpanathan Prabavathi, Ya-Fang Lin, John M. Carroll

#### 2. Trust and Decision-Making with Explainable AI in Immersive Technologies: A Systematic Literature Review.

*Manuscript in preparation, 2025*

Hillmer Chona, Yihao Zhou, Ping Xu, Jeffrey Samuel Schulman Jr., Ting Yu Wu, Chenglin Weng, Siyu Wu, Charan Pushpanathan Prabavathi

## Engineering Experience

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**HDFC Bank Limited**, Mumbai, India

Nov 2022 – Jun 2023

*Product Designer Intern*

- Redesigned account aggregation, digital payments, and consumer service interfaces through benchmarking and field studies, achieving a 93% UAT success rate.
- Prototyped assistive technology features by integrating user needs and contextual insights into innovation workflows.

**Angel Startup in Capital Market (Closed Startup)**, Remote, India Aug 2022 – Oct 2022

*Founding Member and Designer*

- Led user-centered design via concept testing, scenario creation, and iterative prototyping for a social investing platform.
- Participated in early-stage research and design validation with co-founders before the venture was closed due to regulatory constraints.

**Freecharge (backed by Axis Bank Limited)**, Bangalore, India

Jul 2021 – Jan 2022

*Product Designer Intern*

- Conducted user interviews, usability testing, and A/B experiments for 20M+ users in Neo-banking and Pay-later flows.
- Designed high-fidelity wireframes, PWAs, and cognitive walkthroughs, earning a Tech Award for UX research and design effectiveness in high-scale emailer systems.

## Teaching Experience

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**University of Illinois Urbana-Champaign**

School of Information Sciences, Champaign, IL

**IS 316: Design of Usable Information Interfaces**

Spring 2026, Assisted with: [Christopher Lueg](#)

Classroom facilitation, Grading, Lectures.

**IS 202: Social Aspects of Information Technology**

Fall 2025, Assisted with: [Madelyn Rose Sanfilippo](#)

Classroom facilitation, Grading, Discussion Session

**Pennsylvania State University**

College of Information Sciences and Technology, State College, PA

### **IST 505: Foundations of Research Design in Information Sciences and Technology**

Spring 2025, Assisted with: [Xiaolong Luke Zhang](#)

Classroom facilitation, Grading, Qualitative methods, HCI research topics, Method selection, Study design

### **IST 526: Development Tools and Visualizations for Human-Computer Interaction**

Spring 2025, Assisted with: [Xiaolong Luke Zhang](#)

Classroom facilitation, Grading, Method critiques, Proposal drafts, D3.js

### **IST 402: Emerging Issues and Technology: Computer Graphics and Virtual Reality**

Fall 2024, Assisted with: [Xiaolong Luke Zhang](#)

Classroom facilitation, Grading, Three.js, HTML5 Canvas, VR scene design.

### **IST 504: Foundations of Theories and Methods of Information Sciences and Technology Research**

Fall 2024, Assisted with: [Xiaolong Luke Zhang](#)

Classroom facilitation, Grading, Foundations of HCI, Research question development, Literature reviews

## **Academic Curriculum and Research Coursework**

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2026 *"IS 589 Independent Study"*, Instructor: [Michael B. Twidale](#), School of Information Sciences, University of Illinois Urbana-Champaign, Spring

2026 *"IS 519 Research Design in Information Science"*, Instructor: [Jessie Chin](#), School of Information Sciences, University of Illinois Urbana-Champaign, Spring

2025 *"IS 509: Research Design in Information Science"*, Instructor: [Michael B. Twidale](#), School of Information Sciences, University of Illinois Urbana-Champaign, Fall

2025 *"ERAM 552: The Role of Theory in Educational Research"*, Instructor: [Rebecca Taylor](#), College of Education, University of Illinois Urbana-Champaign, Fall

2025 *"IST 594: Scholarly Paper"*, Instructor: [John M. Carroll](#), College of IST, Pennsylvania State University, Spring

2024 *"IST 597: Special Topics, Explainable AI"*, Instructor: [Jonathan Dodge](#), College of IST, Pennsylvania State University, Fall

2024 *"IST 597: Special Topics, Human-Centered Artificial Intelligence"*, Instructor: [Syed Billaah](#), College of IST, Pennsylvania State University, Fall

2024 *"IST 521: HCI"*, Instructor: [Frank E. Ritter](#), College of IST, Pennsylvania State University, Spring

2024 *"IST 525: CSCW"*, Instructor: [Saeed Abdullah](#), College of IST, Pennsylvania State University, Spring

2024 *"IST 526: HCI Tools and Visualization"*, Instructor: [Ting-Hao 'Kenneth' Huang](#), College of IST, Pennsylvania State University, Spring

2023 *"IST 504: IST Research Foundations"*, Instructor: [Xiaolong "Luke" Zhang](#), College of IST, Pennsylvania State University, Fall

2023 *"IST 520: Foundations of Human-Centered Design"*, Instructor: [Yubo Kou](#), College of IST, Pennsylvania State University, Fall

2023 *"IST 597: Special Topics: Intelligent and Interactive Writing Assistants"*, Instructor: [Ting-Hao 'Kenneth' Huang](#), College of IST, Pennsylvania State University, Fall

## **Services**

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### **External Reviewer**

2026 ACM Designing Interactive System – Provocation / Work-in-Progress

2026 ACM SIGCHI Conference on Human Factors in Computing Systems (CHI) – Posters

## Invited Talks and Presentations

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### 0.2 Talks

- 2026 *"Expert Systems: "May Help!"*", IS 316: Design of Usable Information Interfaces, Course Lecture, School of Information Sciences, University of Illinois Urbana-Champaign, April 28
- 2026 *"GUI, Metaphors & Macintosh Demonstration"*, IS 586: Usability Engineering, Course Lecture, School of Information Sciences, University of Illinois Urbana-Champaign, April 07
- 2026 *"GUI, Metaphors & Macintosh Demonstration"*, IS 316: Design of Usable Information Interfaces, Course Lecture, School of Information Sciences, University of Illinois Urbana-Champaign, March 12
- 2026 *"Hard Science Versus Soft Science"*, IS 316: Design of Usable Information Interfaces, Course Lecture, School of Information Sciences, University of Illinois Urbana-Champaign, March 5
- 2025 *"What is Research?"*, Dept of CSE, Kumaraguru College of Technology, July 16
- 2023 *"Persuasive Design: Influencing Billions of Mobile Users"*, Dept of CSE, Kumaraguru College of Technology, January 18
- 2022 *"How to Present a Presentation: VC Pitches and Academia"*, Dept of CSE, Kumaraguru College of Technology, December 5

### 0.3 Poster Presentation

- 2026 *"Academic Writing as Human-Computer Activity"* The Human-Centered Engineering Symposium, Siebel Center for Design, University of Illinois Urbana-Champaign, March 6

## Test Scores

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2024 [American English Oral Communicative Proficiency Test \(AEOCPT\)](#) — Score: 293/300  
*Qualified for TA positions, Department of Applied Linguistics, Pennsylvania State University*

## Skills

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**Qualitative:** Co-design studies, scenario-based design, user interviews, thematic analysis, journey mapping, prototyping & iterative design, usability testing (including A/B experiments, heuristic evaluation, Cognitive Walkthrough), hierarchical task analysis (HTA), design validation & concept testing.

**Quantitative / Computational Methods:** Surveys & Questionnaires, Systematic literature review (SLR), Logging & Interaction Analytics (keystroke and mouse logger), Markov decision process (MDP) agents (Q-learning, policy iteration, deep Q-networks), explainability tools (AIX360, LIME, SHAP), NLP (PEFT/LoRA, LangChain, Whisper, FastSpeech2, Stable Diffusion), reinforcement learning agents (MinWoB++, WGE), visualization & XR prototyping (D3.js, Three.js, HTML5 Canvas, VR scene design).