

KOROK SENGUPTA, PhD

User Experience Architect

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PROFESSIONAL SUMMARY

Senior UX Architect with 15+ years of experience designing and evaluating intuitive human-computer interactions, from conversational AI to hands-free control in immersive mixed-reality (AR/MR) environments. Expert in evaluating Human-AI interaction, mixed-methods experimental design, and conversational agent architecture. Combines academic rigor — including an HCI PhD focusing on hands-free interactive systems — with a proven corporate track record at Robert Bosch driving enabling tools and product innovations across multiple continents.

INDUSTRY KNOWLEDGE & SKILLS

- **Research & Evaluation:** Mixed-Methods Design, Psychometrics, Eye-Tracking Evaluation, Gaze/Voice Interfaces
- **Design & Strategy:** Conversational Agent (CA) Design, Low-Code/No-Code Architectures, Service Design
- **Tools & Analytics:** Microsoft HoloLens, Figma, Sketch, Python [during PhD]

PROFESSIONAL EXPERIENCE

User Experience Architect & Innovation Program Lead

01/2024 – Present

Robert Bosch GmbH (Mobility Aftermarket) | Stuttgart, Germany

- **Enabling Conversational AI:** Lead user-centered design, research, and architecture for conversational agents engineered to help enterprise employees learn, execute complex tasks, and optimize technical workflows.
- **Innovation Management:** Enabling Teams and Idea owners to structure and formulate their ideas from a nascent stage to up to Innovation Management (IM) Levels by balancing product desirability, technical feasibility, and economic viability.
- **LLM Data Analytics:** Build analytical workflows utilizing available LLM architectures to process and decode sparse user data logs, transforming qualitative behavioral patterns into actionable product updates.
- **Enabling Colleagues:** As an enabling role and being certified as a Bosch UX trainer, I lead and conduct UX trainings across different locations.

Scientific Researcher & Project Lead

10/2020 – 12/2023

University of Stuttgart | Stuttgart, Germany

- **Action Research in Education Labs:** Served as Project Lead for IKILeUS (Integrated AI in Teaching at the University of Stuttgart), a large-scale project funded by the BMBF. Co-designed, ran mixed-methods studies, and evaluated how AI and LLM tooling enhance human capability and fluency across higher education curricula.
- **Experimental Instrument Design:** Engineered custom interactive software test benches in Python to capture, evaluate, and model novel hands-free interaction mechanics.
- **Academic Mentorship:** Developed and instructed academic modules including “Introduction to AI” and formally mentored/supervised multiple master’s Thesis candidates.

Scientific Researcher

04/2016 – 09/2020

University of Koblenz-Landau | Koblenz, Germany

- **Human-AI Interface Design:** Designed, developed, and evaluated an innovative eye-tracking virtual keyboard framework, leading to core publications on hands-free human-computer interaction.
- **Curriculum Development:** Enabled the university’s “Introduction to Web Science” curriculum to include crucial topics for industry readiness, establishing metrics to evaluate students’ technical capability growth.

UX/UI Designer

11/2015 – 03/2016

CareOns India Pvt. Ltd. | New Delhi, India

- **Ecosystem Service Design:** Mapped end-to-end multi-sided user journeys connecting doctors, patients, and healthcare providers onto a single digital ecosystem, incorporating strict accessibility requirements.

Design Engineer

11/2010 – 09/2012

Development Consultants Private Limited. | West Bengal, India

- **Instrumentation and Control Design:** Assisted and Led inspection and review of several thermal and nuclear power plant projects from instrument procurement to ICE Control Room Designs.

Sales Engineer

08/2010 – 11/2010

E+H India Pvt. Ltd. | West Bengal, India

- **Internal Sales:** Assisted External Sales team for pricing of temperature, pressure, flow, level instruments

EDUCATION

Ph.D. (Dr. rer. nat.) in Computer Science (Domain: Human-Computer Interaction)

2020 – 2023

University of Stuttgart, Germany |

Thesis: Improving Usability of Gaze and Voice Based Text Entry Systems

Advisor: Prof. Dr. Steffen Staab

M.Sc. in Information and Computer Science

2012 – 2014

University of Luxembourg, Luxembourg |

Thesis: Comparative Analysis of Real Life Driving vs. Simulator Driving

B.Tech in Instrumentation and Control Engineering

2006 – 2010

West Bengal University of Technology, India |

SELECTED PEER-REVIEWED PUBLICATIONS

- **Sengupta, K.,** Pradhan, A. R., McNamee, R., Sayago, S., Chattopadhyay, D., & Joshi, A. (2022, April). Challenges and opportunities of leveraging intelligent conversational assistants to improve well-being of older adults. In *ACM CHI Conference on Human Factors in Computing Systems* (pp. 1-4).
- **Sengupta, K.,** Bhattarai, S., Sarcar, S., MacKenzie, I. S., & Staab, S. (2020, April). Leveraging error correction in voice-based text entry by Talk-and-Gaze. In *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems* (pp. 1-11).
- **Sengupta, K.,** Menges, R., Kumar, C., & Staab, S. (2017, June). Analyzing the impact of cognitive load in evaluating gaze-based typing. In *2017 IEEE 30th International Symposium on Computer-Based Medical Systems (CBMS)* (pp. 642-647). IEEE.
- **Sengupta, K.,** Menges, R., Kumar, C., & Staab, S. (2019, June). Impact of variable positioning of text prediction in gaze-based text entry. In *Proceedings of the 11th ACM Symposium on Eye Tracking Research & Applications* (pp. 1-9).
- **Sengupta, K.,** Menges, R., Kumar, C., & Staab, S. (2017, March). Gazethekey: Interactive keys to integrate word predictions for gaze-based text entry. In *Companion Proceedings of the 22nd International Conference on Intelligent User Interfaces* (pp. 121-124).

HONORS & AWARDS

- **Best Student Paper Award:** “Analyzing the Impact of Cognitive Load in Gaze-based Typing” (CBMS, Greece, 2017).
- **Judges Award:** TPG Accessibility Challenge (Gaze-controlled Web Browser, Australia, 2017).