Chandan Umesh Pai

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SUMMARY

UX Researcher with 2+ years of industry experience at Mercedes-Benz R&D conducting mixed-methods research, usability evaluations, and ergonomic assessments. Skilled in translating behavioral and qualitative findings into actionable design decisions. M.S. Industrial & Systems Engineering (Human Factors), University of Minnesota, May 2026.

EDUCATION

M.S. Industrial & Systems Engineering, University of Minnesota, Twin Cities 09/2024 - 05/2026

Relevant coursework: Systems Engineering, Human Factors Engineering, HCD for Complex Systems, Statistical Methods, Data Visualization

B.E. Mechanical Engineering, Visvesvaraya Technological University, India 08/2018 - 07/2022

SKILLS

Research Methods: Usability testing (moderated & unmoderated), heuristic evaluation (Nielsen's 10), cognitive task analysis, think-aloud protocols, contextual inquiry, card sorting, A/B testing, user interviews, surveys, task analysis, formative & summative evaluation

Tools: Figma, Qualtrics, Miro, Tableau, Python, R, SPSS, MATLAB, Excel (advanced), Google Suite, Microsoft Office

Frameworks & Standards: Endsley Situation Awareness, Norman Action Stages, cognitive load theory, Nielsen heuristics

EXPERIENCE

Engineer, Mercedes-Benz Research & Development India, Bengaluru, India 08/2022 – 06/2024

- Planned and executed end-to-end usability research across **7 vehicle carlines (3 EV, 4 hybrid)**, evaluating technician task flows, accessibility, and error patterns in safety-critical automotive maintenance environments; synthesized findings into structured design recommendations delivered to Germany engineering teams at **95% acceptance rate**.
- Conducted ergonomic assessments and motion analysis using digital human modeling (Siemens NX, CATIA V5); applied NIOSH Lifting Equation and anthropometric analysis (**95th percentile**) to identify postural risk and inform design changes across production and aftersales operations.
- Identified cognitive overload bottleneck in manual evaluation workflow; engineered batch automation enabling simultaneous analysis of **10–20 rivet positions/operation 300% throughput increase** (1 → 4 carlines/month) while maintaining human validation at critical checkpoints.
- Evaluated **6,000–10,000 component positions per vehicle** as sole NPI-access researcher on a 22-person team; earned independent decision-making trust on **~80% of evaluations** without additional review.
- Developed **5 standardized UX research and assessment process documents** currently in active team use; eliminated undocumented knowledge gaps and improved research consistency across engineer transitions.

Intern, Mercedes-Benz Research & Development India, Bengaluru, India 02/2022 – 05/2022

- Supported usability assessments and repair concept research for BIW aftersales engineering; applied task analysis and HFE principles within a globally integrated, safety-critical R&D environment.
- Resolved technical queries from field technicians with **~90% accuracy**; developed understanding of real-world user constraints, physical work demands, and service environment needs.

Graduate Teaching Assistant, University of Minnesota, CSE, Minneapolis, MN 07/2025 – 05/2026

- TA for IE 5511 Human Factors & Work Analysis guided **40+ students** in ergonomic assessment, task analysis, and human performance evaluation.
- TA for IE 5541 Project Management facilitated planning, scheduling, and cross-functional coordination coursework.

UX RESEARCH PROJECTS

Initiators Fellowship Website Redesign University of Minnesota | 2024

- Mixed-methods study: moderated usability testing (**n=5**), heuristic evaluation (**n=3** evaluators, Nielsen's 10), card sorting, A/B testing. Reduced task completion time **51% (4.3s → 2.1s)** and error rate **30% (10 → 7 errors)** through iterative design improvements.

Campus Sync Indoor Navigation App University of Minnesota | 2024

- Cognitive walkthrough (**n=5**) and moderated usability testing (**n=20**); identified wayfinding and decision-making breakdowns. Iterated high-fidelity Figma prototype achieving **90% task accuracy** and **80% user satisfaction** (Likert scale).

AirPods Pro Adaptive Audio Human–AI Interaction Study University of Minnesota | 2025–2026

- Critical Decision Method (CDM) interviews (**n=4–5**) across real-world environmental transitions; applied Endsley's SA framework and Norman's action stages to map cognitive gaps between AI system behavior and user mental models. Produced design recommendations for transparency, feedback design, and user control.

Safety-Critical Service Manual Redesign University of Minnesota | 2025

- Think-aloud protocol (**n=5**) and cognitive load analysis on safety-critical technical documentation; identified information architecture failures causing task errors. Restructured content hierarchy reducing errors **40% (20 → 12 errors)**.