

Surabhi S. Nath

HUMAN-CENTERED AI

COMPUTATIONAL AESTHETICS & CREATIVITY

GENERATIVE AI

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My research bridges **human perception, creativity, and machine learning**. I build and evaluate computational models, AI systems and agents for subjective domains and open-ended tasks, across visual aesthetics, creative design & video editing.

EXPERIENCE

Machine Learning Researcher

May 2026–Present

Bertelsmann AI Hub | Amsterdam

- Built **agentic AI systems** for automated movie/TV show video edits (previews, trailers), using Google ADK for creative planning and workflow orchestration.
- Developed evaluation benchmarks for generated video edits. Work accepted at **NeurIPS 2026 Agentic AI workshop** and findings released as blog posts.
- Engaged with video editors and international stakeholders across Bertelsmann companies including Penguin Random House, Fremantle & RTL Group.

Human-Centered AI Research Intern

Jul–Oct 2025

Toyota Research Institute | Los Altos

- Created a custom **3D design environment** in Blender and JavaScript to measure how abstract goals and feedback influence the creative design process.
- Developed an **AI feedback tool** using Reinforcement Learning and Bayesian modeling. Work received the **Best Paper Honorable Mention** at DCC 2026.
- Testing creative agency and AI personalization for professional designers.

Doctoral Researcher

2022–Current

Max Planck Institute for Biological Cybernetics | Tübingen

- Studying subjective domains and open-ended tasks across **aesthetics, creativity, and design** through the lens of computational cognitive science.
- Unifying **interdisciplinary** perspectives and research on creativity, proposing a computational framework to study creativity as value-guided search.
- Comparing **human and AI** performance, building multimodal evaluation benchmarks, designing rewards, and developing AI support tools.
- Published over 12 papers across venues like Nature, NeurIPS, ICLR & CogSci.

Behavioural Modelling Researcher

2020–2021

Max Planck Institute for Human Development | Berlin

- Analyzed affective and risky decision making using **mixed-effects and Hierarchical Bayesian models**. Work accepted at SPUDM conference.

Research Intern, Decision-Making AI

May–Jul 2019

University of Southern California | Los Angeles

- Developed a **Reinforcement Learning** model to study depression in college students in everyday life. Work accepted at Journal of Biomedical Informatics.

RESEARCH-TO-PRODUCT STRENGTHS

- Human Understanding:** Expressed subjective experience and human judgments through computational measurements for creativity and aesthetics.
- Interdisciplinary expertise:** Moved from behavioral questions and experimental paradigms across fields such as cognitive science, design, aesthetics, creativity, and reinforcement learning to publications and digital artefacts.
- AI Evaluation & Training:** Experienced with human-centred and multimodal AI evaluation, reward design, foundation model fine-tuning and inference.
- Invited Talks:** Delivered a dozen talks across academia and industry, communicating research findings across varying contexts and wide audiences.
- Press Articles:** Translated research insights into articles for consumption by wider audiences. Parts of work featured over news channels across Germany.
- Software Development:** Built interactive experiences, software tools and games, translating research tasks into scalable, online technologies.

EDUCATION

Ph.D. Candidate | Cognitive Science & AI

Max Planck Institute for Biological Cybernetics,
Max Planck School of Cognition & Uni. Tübingen
Advisor: [Prof. Peter Dayan](#)

M.Sc. | Mind & Brain, 2022

Humboldt University of Berlin
Grade: 1.1 (German scale: highest = 1, lowest = 4)

B.Tech. (Hons.) | Computer Science, 2020

IIIT Delhi
GPA: 9.52/10

SELECTED PUBLICATIONS

Unified Agentic Video Editing – NeurIPS Agentic AI Benchmarks & Applications Workshop, 2026

Designing Rewards for Rewarding Designs – Design Computing & Cognition, 2026

A Compositional Representation for Semantic Search – under review at Nature Comms, 2026

A Foundation Model of Human Cognition – Nature, 2025; coauthor

Pencils to Pixels: Creative Drawings in Kids, Adults and AI – CogSci, 2025; oral presentation

Characterising the Creative Process in Humans and LLMs – International Conference on Computational Creativity, 2024

Relating Objective Complexity, Subjective Complexity and Beauty – Psychology of Aesthetics, Creativity & the Arts, 2023

SELECTED HONOURS

Best Paper Honorable Mention, Design Computing and Cognition, 2026

Outstanding Paper Award, ICLR Workshop on Efficient Spatial Reasoning, 2026

Robert Francès Award for outstanding student contributions to empirical aesthetics, 2024

SKILLS

ML & AI

Generative AI, Agentic AI, Multimodal data, AI Evaluation, Reward design, Creative interfaces

Human Research

Behaviour experiments, Study design, Human data, Computational Modelling, Statistics

Soft Skills

Interdisciplinary expertise, Communication skills, Leadership, Reviewing & Mentorship experience