

Chirayu Nimonkar

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EDUCATION

Princeton University

May 2026

B.S.E in Computer Science, Minors in Math, Machine Learning (GPA 3.92/4.0) Princeton, NJ

- **Selected Coursework:** Reinforcement Learning, Computer Vision, Real Analysis, Distributed Systems, Probability & Stochastic Systems, Mechanism Design, Computational Models of Cognition, Optimization, Algorithms & Data Structures
- **Graduate Coursework:** Information Theory, Neural Rendering

PUBLICATIONS & PREPRINTS

(*equal contribution)

1. **Chirayu Nimonkar***, Shlok Shah*, Catherine Ji, and Benjamin Eysenbach. “Self-Supervised Goal-Reaching Results in Multi-Agent Cooperation and Exploration”. *Under Review at International Conference on Learning Representations (ICLR)* (2026). URL: <https://arxiv.org/abs/2509.10656>.
2. **Chirayu Nimonkar**, Eli Knight, Ivan C. Carmona, and Ravi L. Hadimani. “Anatomically accurate rodent head models and brain phantoms and methods for making and using the same”. US20250001697A1. U.S. Patent (Pending). 2025. URL: <https://patents.google.com/patent/US20250001697A1>.
3. **Chirayu Nimonkar**, Eli Knight, Ivan C. Carmona, and Ravi L. Hadimani. “Development of Anatomically Accurate Brain Model of Small Animals for Experimental Verification of Transcranial Magnetic Stimulation”. *IEEE Transactions on Magnetics* 58.2 (2022), pp. 1–4. DOI: 10.1109/TMAG.2021.3104517.

RESEARCH EXPERIENCE

Princeton Reinforcement Learning Lab

Sept 2024 – Present

Lab Member (Advisor: Prof. Benjamin Eysenbach)

Princeton, NJ

- Working on generalization and efficient exploration in single and multi-agent goal-conditioned settings. Developing methods for analogical reasoning with representations to transfer skills across various domains.
- First-author of a novel goal-conditioned multi-agent reinforcement learning (MARL) method that removes the need for complex reward engineering, enabling cooperative agents to reach user-specified goals; paper currently under review

Computational Cognitive Science Lab

Jan 2023 – Present

Research Assistant (Advisor: Prof. Tom L. Griffiths)

Princeton, NJ

- Developed efficient code to process a 437+ million chess game dataset on computing cluster, leading to a deeper understanding of human decision-making and learning for both cognitive science and machine learning applications
- “Improving LLM Numeracy: Modeling Internal Representations of Numbers of Large Language Models.” Employed similarity judgments to identify underlying reasons for quantitative mistakes.

Andlinger Center at Princeton

May – Aug 2024

Research Assistant (Advisor: Chris Greig)

Princeton, NJ

- Developed robust and extensible code to optimally schedule infrastructure projects using Mixed Integer Linear Programming, accounting for complex cross-project dependencies and real-world constraints
- Highlighted current plans are insufficient for the US to reach net-zero emissions by 2050, suggesting alternative routes
- Built domain knowledge-driven assumptions and estimates for infrastructure modeling in absence of complete datasets
- Funded by Google and Deloitte for enabling government and industry stakeholders to reach emission targets

Cardiff University Brain Research Imaging Center

Jun – Aug 2023

Research Assistant (Advisor: Leandro Beltrachini)

Cardiff, Wales, UK

- Generated hyper-resolved scans using ML synthesis algorithms + nonlinear registration on low-field MRI data, reducing the required magnetic field strength for diagnosis and EEG/MEG source localization by 47x
- Funded by the Bill & Melinda Gates Foundation for bringing affordable diagnosis/imaging to developing countries
- Designed a magnetometer and fiducial phantom for precise MRI field characterization

INDUSTRY EXPERIENCE

Amazon Web Services (AWS)

May – Aug 2025

Software Development Engineer Intern

Seattle, WA

- Shipped a production-ready SageMaker Pipelines integration, overcoming service and cross-team integration challenges. Implemented customer-requested features that enabled seamless data-processing integration and reduced pipeline operating costs through automated scaling.
- Designed and built a new service feature end-to-end using Java, TypeScript (AWS CDK), and Python, orchestrating S3, Lambda, ECS, and CloudWatch to deliver fully managed ML workflows. Prototyped new LLM evaluation capabilities in the service.
- Navigated an enterprise-scale microservices architecture, passing rigorous design/code reviews and presenting to stakeholders.

TrueToForm (Startup)

Dec – May 2024

Software Engineering Intern

Remote

- Enabled four new body measurements by designing and building new automated measurement extraction algorithms and a rotation state tracking algorithm. Validated algorithms across diverse body types.
- Delivered technical documentation and worked directly with the CTO to facilitate integration into production avatar system for clothing fit prediction

SELECTED AWARDS

- **President Shapiro Prize for Academic Excellence:** Selected from top 3% of entire graduating class
- **Tau Beta Pi Honor Society:** Selected from top 12.5% of Engineering class