

Vishwas Sathish

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vsathish@cs.washington.edu ✉ +1(206)-636-7405 📞

Paul G. Allen School of Computer Science & Engineering, Seattle, WA 98195

EDUCATION

University of Washington, Seattle

2021 - Present

PhD student in Computer Science and Engineering (Advisor: Rajesh P.N. Rao)

PES University, Bangalore

2015 - 2019

B.Tech in Computer Science and Engineering (Advisors: Rajiv Bajpai & Bhaskarjyoti Das)

WORK EXPERIENCE

Amazon (A9), Palo Alto

June 2025 - Present

Applied Scientist Intern | Multimodal models, RL finetuning, vLLM, ray, pytorch, AWS

Advisors: [Douglas Gray](#) & [Arnab Dhua](#)

Working with the multi-modal search team at Palo Alto, CA. **Finetuning Qwen** family of models with novel RL algorithm built on **GRPO** technique for Visual Question Answering (VQA). Solving multi-hop VQA with search and tool use. Early experiments show state-of-the-art results on existing datasets.

Paul G. Allen School of Computer Science and Engineering

Jan 2022 - Present

Graduate Research Assistant | Pytorch, Jax, Tensorflow, Habitat-Lab, Mujoco, Maniskill, Gymnasium

Advisor: [Rajesh P.N. Rao](#)

Focus: Sequence Models, Reinforcement Learning, Representation Learning, Vision-Language Models

- **Masked Composer:** Distilled Vision-Language Models (VLMs) to mask away task-irrelevant attributes in Visual RL. These models are highly generalizable and scale to complex visual tasks such as language-conditioned rearrangement (LLaRP), manipulation in cluttered scenarios, and navigation in complex environments. Work under submission.
- **Active Predictive Coding:** Hierarchical world models and policies using contrastive learning, to solve compositional navigation tasks such as [Habitat 2.0](#). Published in Robotics Science and Systems (RSS Priors4RL workshop) and Neural Computation journal, 2024.

SensAI Healthcare (7sugar), Bangalore ([Website](#))

July 2019 - June 2021

Machine Learning Engineer | Tensorflow, Keras, Numpy, Plotly, Javascript, asyncio

Mentors: [Adhi Kesarla](#) & [Rajesh Rao](#)

Focus: Computer Vision, Hands-on Product Deployment, Autoregressive Forecasting, and Dialog Agents

- **Computer Vision:** Implemented a real-time meal classifier and calorie estimator using the YOLO family of models for fast inference. My model classified more than 200 varieties of food, reducing the inference time from around 5 minutes (by a dietitian) to less than 0.5 seconds per meal image. Received the [TIDE 2.0](#) Start-up Grant for this project.
- **Forecasting:** Trained and deployed a state-of-the-art GRU-Decay RNN to perform auto-regressive glucose forecasting with missing data. Also showed that a high variation in meal times was correlated with a higher variation in blood glucose throughout the day (my work was presented at the Diabetes India Conference, 2020).

Morgan Stanley, Bangalore

Jan 2019 - July 2019

Technology Analyst Intern | Data Transformation, Java, Javascript, Angular, Spring Framework

Worked on data routing and transformation using Apache Camel for Machine Learning pipelines. The software was used by multiple services within the organization, including a responsive website that I designed to search and query financial data.

Systems Biology Institute, Tokyo ([Website](#))

July 2018 - Sept 2018

Summer Research Intern | Python, Scikit-learn, Numpy, Pandas

Mentors: [Vipul Gupta](#) & [Ayako Yachi](#)

Built an Explainable Machine Learning Framework for Drug Classification and Discovery. The framework explains why a particular output class was chosen for a given set of drug compositions.

PATENTS

1. **Apparatuses, Systems, and Methods for Active Predictive Coding Networks**

2024

Full US Patent 2024 (Serial Number: 18/408,173). Patent Pending. [Google Patents Link](#)

Rajesh Rao, Dimitrios C. Gklezakos, **Vishwas Sathish**

ACADEMIC PUBLICATIONS

1. **Masked Composer: Masked Model-Based RL for Compositional Generalization**
Vishwas Sathish, Matthew James Bryan, Sidharth, Abhishek Gupta, Rajesh P. N. Rao
(*In Submission*)
2. **Decoding Pain: Statistical Identification of Biomarkers from Electrophysiological Signals**
Sidharth*, **Vishwas Sathish***, Shweta Bansal, Samantha Sun, Timmy Pham, Rajesh Rao, Jefferey Herron.
Accepted @ AAAI 2025, Workshop on Health Intelligence ([website](#))
3. **Learning Hierarchical Abstractions of Complex Dynamics using Active Predictive Coding**
Vishwas Sathish, Rajesh Rao.
Presented @ Robotics Science and Systems (RSS) 2024, Priors4Robots Workshop ([workshop](#)) ([paper](#))
Poster @ Connectome 2024 ([Poster](#))
4. **Active Predictive Coding: A Unifying Neural Model for Active Perception, Compositional Learning, and Hierarchical Planning**
Rajesh Rao, Dimitrios C. Gklezakos, **Vishwas Sathish**.
Published @ Neural Computation, 2024 ([Paper](#))
Presented @ Proceedings of the Annual Meeting of the Cognitive Science Society (Cogsci), 2023 ([Poster](#))
5. **Graph Embedding Based Hybrid Social Recommendation System**
Vishwas Sathish, Tanya Mehrotra, Simran Dhinwa, Bhaskarjyoti Das
Accepted for Oral @ The 9th International Conference on Advances in Computing & Communications, 2019 ([Paper](#))

PREPRINTS AND RELEVANT PROJECTS

1. **LLeMpower: Understanding Disparities in the Control and Access of LLMs** ([arxiv preprint](#)).
Vishwas Sathish, Hannah Lin, Aditya K Kamath, Anish Nyayachavadi. 2024
2. **Spatio-Temporal Abstractions in Reinforcement Learning** ([Paper](#)).
Vishwas Sathish, Courtne Paschall 2022
3. **Examining Large Language Model Cognition Through Puzzles and Optical Illusions.** ([Paper](#))
Vishwas Sathish, Aditya Kamath, Raphael Bechtold 2023
4. **Sentiment Analysis for Amazon Product Reviews with GloVe embeddings and LSTMs** ([Github](#))
Vishwas Sathish 2017

SKILLS

Tools: Pytorch, Tensorflow, Transformers, vLLM, TRL, Numpy, Scikit-learn, Pandas, AWS, Docker, Ray, Slurm, Git, Bash, Python, C/C++, Java, JavaScript/TypeScript, HTML/CSS, L^AT_EX

Expertise: Multimodal Models, Unsupervised Representation Learning, Reinforcement Learning, Vision Transformers, World Models, State Space Models, Planning and Navigation

PROFESSIONAL RESPONSIBILITIES

- **Academic Review Service** - ICCV 2025, ICLR 2025, Robotic Science and Systems (RSS) 2024 2024 - 2025
- **Graduate Application Reader** (ML/Neural Computing Track), Paul G. Allen School of CSE 2022 - 2025
- **Student Area Chair** (Neural Computing Track): PhD Admissions, Paul G. Allen School of CSE 2022
- **Pre-Application Mentorship Service, Mentor** ([PAMS](#)), Paul G. Allen School of CSE 2022
Mentored 4 students from underrepresented communities towards their PhD Applications for Fall 2022.
- **Graduate Teaching Assistant** ([UW CSE 421](#)), Paul G. Allen School of CSE Sept 2021
- **Mentoring** - Sidharth (incoming CS PhD, UMichigan), Jeffrey Duan (SDE @ AWS), Yubo Zhang (PhD @ UW)

AWARDS AND ACHIEVEMENTS

- **ACM ICPC:** Bagged Rank 1 at the institution level ACM-ICPC and represented PES University at the regional contest in Chennai. Two-time top 10 rank in ICPC Pacific NW Qualifiers. 2018, 2022, 2023
- **TIDE 2.0 Startup Grant:** [Received the grant](#) for my work on meal classification at SensAI Healthcare. 2019
- 2 time recipient of **CNR Rao Metrit Scholarship** awarded by PES University for academic excellence. 2017, 2018
- **SOF Science Olympiad:** Gold Medalist with a state rank of 14 and international rank 410. 2015
- Among **Top 0.4%** of 150,000 candidates appearing in the 2015 KCET Examinations. 2015
- Among **Top 1%** of 1,300,000 students appearing in the 2015 JEE Mains Examinations. 2015