

# Vivek Anand

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## PURPOSE

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I am a highly motivated PhD student working at the intersection of machine learning, neuroscience and psychology. I want to understand how the brain works and how we can interface with it to both restore lost function and augment it with new capabilities.

**I am looking for an internship or co-op position for summer 2026 in neurotechnology that leverages my skills, background and interests.**

## EDUCATION

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### Georgia Institute of Technology

Atlanta, GA

*PhD in Machine Learning*

*Aug 2023 — May 2028*

- Cumulative GPA: 3.8/4.0 | Computational Neural Engineering Training Program Fellowship, National Defense Science and Engineering Fellowship, President's Scholar.

### Georgia Institute of Technology

Atlanta, GA

*Master of Science, Computer Science*

*Aug 2021 — May 2023*

- Cumulative GPA: 3.83/4.0 | Dean's List

### The Pennsylvania State University

University Park, PA

*Bachelor's of Science (Honors), Computer Science & Biology*

*Jun 2017 — May 2021*

- Cumulative GPA: 3.88/4.0 | Millennium Scholar, Schreyer Honors Scholar, Dean's List, President's Freshman Award

## SELECTED AWARDS

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### National Defense Science and Engineering Fellowship

Sep 2025 — May 2028

- Fully funds three years of PhD studies from 2% of applicants in the US.

### Computational Neural Engineering Training Program Fellowship

Aug 2023 — Jun 2025

- Fully funds the first two years for 4 PhD students every year from Georgia Tech and Emory in Neural Engineering.

### Millennium Scholar

Jun 2017 — Aug 2021

- One of ~40 each year to receive scholarship that fully funds room and board for all four years of undergraduate studies at Penn State.

### Schreyer Honors Scholar

Jun 2018 — Aug 2021

- One of top ~2% of undergraduate students at Penn State.

## PUBLICATIONS

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- [1] **V. Anand**, A. Helbling, G. Berman, M. Davenport, S. Alagapan, and C. Rozell, "LORE: Uncovering the Intrinsic Dimensionality of Perceptual Similarity Data," *submitted to Neural Information Processing Systems (NeurIPS)*, 2025.
- [2] **V. Anand et al.**, "Biking vs Button Pressing: A Naturalistic Approach to Effort Based Decision Making (**2nd Place Poster Award**)," *Poster presented at InterfaceNeuro*, May 2025.
- [3] **V. Anand**, J. Cui, J. Heavey, A. Vullikanti, and B. A. Prakash, "H2ABM: Heterogeneous agent-based model on hypergraphs to capture group interactions (**Best Poster Award**)," in *Proceedings of the 2024 SIAM International Conference on Data Mining (SDM)*, 2024, pp. 280–288.
- [4] Y. Su, **V. Anand**, J. Yu, J. Tan, and A. Wierman, "Learning-Augmented Energy-Aware List Scheduling for Precedence-Constrained Tasks," *ACM Transactions on Modeling and Performance Evaluation of Computing Systems*, vol. 9, no. 4, pp. 1–24, 2024.
- [5] **V. Anand**, A. Pramov, S. Vrachimis, M. Polycarpou, and C. Dovrolis, "Incremental Versus Optimal Design of Water Distribution Networks-The Case of Tree Topologies," in *International Conference on Complex Networks and Their Applications*, 2023, pp. 251–262.

- [6] **V. Anand**, M. Yang, and Z. Zhao, “Mitigating Filter Bubbles within Deep Recommender Systems,” *arXiv preprint arXiv:2209.08180*, 2022.
- [7] Y. Su, J. Yu, **V. Anand**, and A. Wierman, “Learning-augmented energy-aware scheduling of precedence-constrained tasks,” *ACM SIGMETRICS Performance Evaluation Review*, vol. 49, no. 2, pp. 3–5, 2022.
- [8] **V. Anand** and B. A. Prakash, “Modelling Healthcare Associated Infections with Hypergraphs,” in *epiDAMIK 5.0: The 5th International workshop on Epidemiology meets Data Mining and Knowledge discovery at KDD 2022*, 2022.

## WORK EXPERIENCE

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**Graduate Research Assistant** Aug 2023 — Present  
Georgia Institute of Technology Atlanta, GA

- Identifying neural correlates of human effort-based decision making via stereoelectroencephalography (SEEG) on Natus and Blackrock systems.
- Implemented and conducted multimodal software task and hardware instrumentation (EMG, Pupillometry, Eyetracking, Hardware Triggering) to collect data from 5+ patients at Emory University Hospital.
- Formulated a novel active learning based data collection and representation learning pipeline to quantify subjective percepts like taste, smell, effort perception etc. from 100+ simultaneous users.

**Applied Artificial Intelligence Intern** May 2022 — Aug 2022  
Netomi Inc. Remote

- Developed a novel semisupervised clustering algorithm to perform automated discovery of customer service topics for unseen customer service tickets that reduced human intervention time by 80%
- Integrated new visualization and data exploration tools into company’s existing clustering pipeline to reduce discovery time by 50%
- Reduced server costs by up to 70% by developing interrupt tolerant clustering algorithms that leverage down time on AWS servers via spot instances.

**Graduate Research Assistant** Dec 2021 — May 2023  
Georgia Institute of Technology Atlanta, GA

- Developed novel hypergraph agent based model to better capture nonlinear group dynamics in spread of healthcare associated infections in hospitals by up to 30%.
- Obtained 60% speedup in simulation time of agent based model by leveraging sparse linear algebra.

**Summer Undergraduate Researcher** May 2020 — Aug 2020  
California Institute of Technology Remote (Covid-19)

- Co-developed an algorithm to schedule tasks across multiple machines to minimize energy consumption and time with theoretical guarantees.
- Implemented a comprehensive simulation test bench to evaluate to benchmark algorithm against real world and simulated workloads.

## MENTORING AND PROJECT MANAGEMENT

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### Undergraduate Students

**Daniel Achacon** Nov 2024 — Present

- Trained him to build decision-making tasks in Python using Psychopy and React with precise timing for a human effort-based decision-making study.
- Provided guidance to study reaction times of patient responses from the data collected from 5+ patients at Emory University Hospital.

**Lexi (Zijing) Yan** Jan 2024 — Present

- Trained her to instrument and test hardware (EMG, Pupillometry, Eyetracking) with synchronization via sync pulses and lab streaming layer for human effort-based decision-making study.
- Mentored her to analyze and pupillometry and eyetracking from the data collected from 2+ patients at Emory University Hospital.

**Tianshu (Terry) Yin** Mar 2024 — Present

- Mentoring him to develop large language model (LLM) based AI agents to simulate humans to speed up task design for human effort-based decision-making study.

## Graduate Students

**Wangzhuo Shi** (<https://github.com/siplab-gt/NEXT>)

Aug 2024 — Present

- Managed him to build a crowdsourced active learning data collection platform from an old buggy codebase to learn subjective percepts from 100+ simultaneous users.
- Mentored him to add new features such as rank order queries and a lab developed active learning algorithm to the platform.

## SKILLS

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### Technical Skills

Python, Java, C, R, Matlab, JavaScript, Tensorflow, Torch, Jax, Psychopy, Neurokit, MNE, Linux Programming, Docker, AWS, Google Cloud Platform, Azure, Git, Typst, Latex, Markdown, SQL, MongoDB, Hbase, Apache Spark, Apache Airflow.

### Other Skills

- **Project Management**
  - ▶ Managed 4+ undergraduate and graduate students in the lab on long term and short term projects with clearly defined goals and timelines.
  - ▶ Trained students (even freshmen undergraduates) to learn new skills such as hardware instrumentation, software development and data analysis towards projects with tangible outcomes.
- **Patient Interaction and Communication**
  - ▶ Conducted over 5+ data collection sessions with patients from Emory University Hospital.
  - ▶ Communicated with patients and their families about the study, its goals and the data collection process and maintained their motivation while prioritizing their comfort and safety.

## SERVICE

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### Reviewer

- **NeurIPS** 2025 — Present
- **ICML Human Feedback Workshop** 2025 — Present
- **PLOS One** 2023 — 2024

### Leadership

**Chair: CNTP Professional Development Committee**

Sep 2024 — Present

Georgia Institute of Technology

Atlanta, GA

- Organize Professional Development events for 50+ students in the Computational Neural Engineering Training Program.

### Broader Community

**Volunteer**

2024 — 2024

Atlanta Science Festival

Atlanta, GA

- Taught elementary and middle school children about neuroscience and neuroengineering with hands on backyard brain demos and experiments.

**Volunteer**

2023 — 2024

Letters to a Pre-Scientist

Atlanta, GA

- Wrote letters to elementary and middle school students about my research and career path to inspire them to pursue STEM careers.

## TEACHING

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**Teaching Assistant- CS 3510: Algorithms**

Jan 2022 — May 2023

Georgia Institute of Technology

Atlanta, GA

- Managed 8-10 TAs for 200+ students in the Data Structures and Algorithms class.
- Graded over 10+ assignments and 4 exams per semester within a 1 week turnaround time.

- Conducted 2+ office hours per week and monthly review sessions to help students with course material and assignments.

**Teaching Assistant- CSE 8803: Data Science for Epidemiology**

Aug 2021 — Dec 2021

Georgia Institute of Technology

*Atlanta, GA*

- Sole TA for this special topics graduate class with 30+ students.
- Formulated assignments with Professor and did them, graded them and conducted office hours.

**EXTRACURRICULARS**

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**Georgia Tech Cricket Club**

Aug 2021 — Present

- Grew the club from 5 to over 50 members in 2 years.
- Organized operations and local scrimmage matches and tournaments for 50+ members.
- Obtained funding from GT Student Government to purchase equipment and reserve field access.