Pranav Gade

pranavg.me

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EDUCATION

- **Indian Institute of Information Technology**   Lucknow, India
  Bachelor of Technology in Computer Science and Artificial Intelligence; Current CGPA: 9/10   *Dec. 2020 - present*
  Relevant Coursework: Artificial Intelligence, Machine Learning, Deep Learning, Data Structures, Algorithms, Automata Theory,
  Database Management Systems, Operating Systems, Big Data Analytics, Compiler Design, Computer Graphics

EXPERIENCE

- **CERI SRF**   Cambridge, UK
  Summer Research Fellow   *July 2022 - Sept 2022*
    - Participated in Cambridge Existential Risks Initiative's Summer Research Program, researching software supply chain security with a specific focus on ML pipelines
    - Mapped out and quantified risks posed by supply chain attacks, and recommended a framework for providing guarantees in worst-case scenarios

- **SERI MATS**   Remote
  Fellow   *June 2022*
    - Participated in Stanford Existential Risks Initiative's ML Alignment Theory Scholars Program
    - Was mentored by Evan Hubinger, in the **Deceptive AI** track's training program

- **AI safety camp**   Remote
  Participant   *Jan 2022 - June 2022*
    - Worked on studying the **Impact of Human Dogmatism on Training**, mentored by Daniel Kokotajilo
    - Analyzed grokking models as a baseline for generalization and established invariants for the same
    - Built an application to run parallel hyperparameter searches on kubernetes

- **Redwood Research's ML Alignment Bootcamp**   Berkeley, CA
  Student   *Jan 2022*
    - Attended the month-long bootcamp about ML and Alignment, organized by Redwood Research and Lightcone
    - Built imagenet, BERT, and GPT-2 from scratch using pytorch. Implemented interpretability techniques for them.
    - Implemented various training techniques including pipeline and data parallelism.
    - Replicated OpenAI's GLIDE text to image synthesis paper

- **QuantCo**   Zürich, Switzerland
  SWE Intern   *Jun 2021 - Aug 2021*
    - Worked on QuantCo's internal toolchain for evaluating SQL databases performance for data science.
    - Containerized the benchmarker and deployed it to Google Kubernetes Engine.
    - Benchmarked and evaluated BigQuery, Microsoft SQL server, PostgreSQL, and Snowflake database systems.
    - Designed and developed QuantCo's engineering hiring challenge, challenge.quantco.com

- **KDE Community**
  Open Source Developer, GSoC Mentor   *Nov 2018 - present*
    - **networkmanager-qt:** a Qt wrapper for NetworkManager API - during Google Code-in 2018
    - **marK:** a multimedia annotation tool for ML - during Season of KDE 2021 as a participant; and during Google Summer of Code 2021 as mentor.

AWARDS & ACHIEVEMENTS

- **Google Code-in 2018 Grand Prize Winner**   2018
    - Google Code-in is a contest by Google to encourage participation in open-source software. I completed 34 tasks in the contest and was selected as the Grand Prize winner by KDE Community.
    - As a part of the prize, I was invited to Google's Headquarters in Mountain View, California.

- **Ranked 52 out of 15817 globally in PicoCTF**   2019
    - CTFs are cybersecurity competitions consisting of a series of challenges where participants must reverse engineer, break, hack, or decrypt the challenges. PicoCTF is organized by security experts at Carnegie Mellon University.
    - My team was ranked 52nd out of 15817 among high school and college students from around the world.

Projects

- **ghsok:** Gin Hyperparameter Search On Kubernetes automates jobs on k8s clusters to search over hyperparameters
- **glide:** my implementation of OpenAI's GLIDE text to image synthesis algorithm
- **glide-train:** my implementation of training code for GLIDE
- **jLHS:** fast and tiny HTTP/1.1 server written in Java without any dependencies, supports GET and POST requests
- **Java-Disassembler:** .class file parser and serializer. Also disassembles code from compiled Java code.
- **FabricHax:** A minecraft mod to automate repetitive tasks
- **PhonePut:** An android application that turns your device into an input device for your computer
- **htcpcp-impl:** Implementation of rfc2324 - Hyper Text Coffee Pot Control Protocol (HTCPCP/1.0)
- **networkmanager-qt:** NetworkManagerQt provides access to all NetworkManager features exposed to DBus API
- **marK:** A machine learning dataset annotation tool which allows users to annotate multiple types of data
- **My website:** pranavgade20.github.io

Skills

- **Programming Languages/Frameworks**: Java, Python, C++, C, JavaScript/NodeJS, Bash Scripting, Rust, R, Haskell, 8085 Assembly, x86 Assembly, Kotlin, Groovy, PyTorch, cuda
- **Reverse Engineering/Information Security**: Ghidra, Radare2, Android Studio, GDB, Wireshark
- **Other Software**: Linux, Docker, Kubernetes, Google Cloud, git/mercurial, Gradle, Android, PostgreSQL, Snowflake, MongoDB, Regex, JSON, LaTeX