S Sai Vineet

Email : saivineet89@gmail.com
Mobile : +91-9546458031
GitHub: https://github.com/svineet/
LinkedIn: https://www.linkedin.com/in/saivineet/

Hyperlinks at appropriate places

Education

- **Birla Institute of Technology and Science, Pilani** — Goa, India
  B.E (Hons) Computer Science; CGPA: 8.45 — *Aug 2018 - Aug 2022*

Experience

- **Walmart Global Tech India** — Remote
  Software Engineer Intern — *May 2021 - Present*
  - Implementing data integrity checks from store databases to master database.
  - Developing a reporting tool to report pricing anomalies in stores during markdown (sales) pricing periods (Apache Spark, Java, Python)

- **Google Summer of Code 2020 with GNOME Foundation** — Remote
  Software Engineer — *May 2020 - August 2020*
  - Gitg is GNOME's GUI client for exploring the history of a git repository and making changes such as merges, cherry-picking, etc. As a part of GSoC 2020, I worked on optimising the code for files plugin, which allows users to explore the state of a file in past commits from the repository's history.
  - Created a lazy loaded tree view widget, achieving 6x speedup in loading of repository histories. Wrote tests for the same (Vala, GLib).

- **Central Electronics Engineering Research Institute (CSIR - CEERI)** — Pilani, India
  Research Intern — *Summer 2020*
  - Worked on automated tuning and parameter scheduling of PID controllers. PID controllers are electronics devices used to regulate certain systems, such as temperature in an AC can be maintained via a PID controller without complicated logic. A agent that tunes controllers automatically was designed and implemented using Reinforcement Learning techniques.
  - Implemented research paper "Reinforcement Learning in Continuous Action Spaces (H. van Hasselt, M. Weiring, 2007)" in Python and PyTorch
  - Implemented PID simulation environment, novel reward functions and exploration strategies to optimise behaviour of tuning agent.

- **Sensum Fintech (now known as 50xInvestments)** — Bangalore, India
  Backend Engineer — *Summer 2019*
  - **algokart.in**: Designed and implemented backend infrastructure (Python) to run medium frequency quantitative trading strategies that are served to customers (Python, numpy, pandas)
  - **Research tools**: Designed and implemented high speed backtesting software in Cython to test quantitative trading strategies and find performance statistics. Scraped and cleaned market data from Zerodha API for the same.

Achievements and Awards

- **Google Code-in 2015: Grand Prize Winner**: Selected as **one of 28 winners globally** in Google Code-in 2015. Contributed to the organisation Apertium, and **visited Google HQ, Mountain View, California in summer of 2016 on an all-expenses paid trip.**
- **Google Code-in 2013/2014: Finalist**: Awarded Finalist title for open source contributions during Google Code-in 2013/2014 with Sugar Labs, and Apertium.
- **Google Code2Learn 2014 Winner**: Selected as one of 3 winners in 9th and 10th Grade category. Created a physics simulator application, for which the code can be found **here**. **Video demonstration**

Projects

Headings are links to relevant code repositories

- **Physics Simulator**: A 2d playpen, where you can use gears, pins, and objects to draw and simulate mechanical systems. **Video demonstration.**
- **Pacman AI using Reinforcement Learning**: Deep Q-value Network implementation that solves Pacman, reading pixels from screen and achieving super human performance.
- **Monte Carlo Algorithm Performance Analyser**: A program that can analyse averaging running time of an algorithm automatically, just given the input space and algorithm implementation. I used it to analyse a popular COVID-19 testing strategy, **here**
- **Tic Tac Toe AI**: Python program that achieves perfect play in Tic Tac Toe using the Minimax algorithm.

Scholastic Achievements

- Awarded **teaching assistant** position for the course of **Data Structures and Algorithms**. As a TA, I was responsible for making tutorial materials and taking tutorial lessons for a class of about 400 students across various disciplines.
- Awarded institute **Merit Scholarship** for being in the top 3% academically in semester 1-1 and **Merit cum Need Scholarship** for semesters 3-1 and onwards.
- Secured All India Rank **3083** out of 2 lakh+ aspirants in JEE (Advanced) 2018
- Secured All India Rank **4308** out of 1 million+ aspirants in JEE (Main) 2018
- **Qualified Zonal Computing Olympiad 2017**, and was allowed to appear for Indian National Olympiad in Informatics 2017.

Programming Skills

- **Languages**: Python, C, C++, Java, ES6, SQL, Vala
- **Technologies**: Gtk, Django, PyTorch, React, Spark, Google Cloud Platform, Google Looker