ABHINEET JAIN

Senior Software Engineer at Tesla

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Work Experience

Senior Software Engineer, Tesla *Jun '23 - present*

- Working with the Factory Software team on software systems that manage manufacturing processes. (Go, Typescript)

Software Engineer Intern, Coder Technologies *May '22 - Aug '22*

- Worked on **full-stack development** for Coder OSS - an open-source platform for creating and managing developer workspaces on any preferred clouds and servers, it is well-received with over **8k stars** on Github. (Go, TypeScript)
- Enabled consistent actionable error handling, improved command line and web experiences, among other contributions.
- Contributed to an internal Licensing RFC describing support for an enterprise version of Coder OSS.

Staff Software Engineer, Indeed *Apr '21 - Jul '21*

- Worked on **Indeed Apply** - a platform that creates and delivers **millions** of job applications everyday.
- **Team lead** for a 6-member engineering sub-team, planned the team's work and drove the deliverables via other engineers with mentorship.
- **Technical lead** for a 30-member engineering team working on end-to-end experience of the job application system involving multiple frontend, API and backend components.
- **Founder and lead, GraphQL Guild** - Led a group of 20 engineers from different teams, collected and maintained knowledge about GraphQL and recommended best practices to teams across Indeed.

Senior Software Engineer, Indeed *Oct '19 - Mar '21*

- **Designed and developed an API** using GraphQL that evaluates the quality of job applications to inform applicants about a possible mismatch with the job, reducing **10 million** low quality applications every month.
- **Led a multi-quarter project** to redesign the Indeed Apply frontend that improved hires by around 4%.
- **Mentored** fellow engineers on frameworks like React.js, Spring and Node.js.

Software Engineer, Indeed *Jul '17 - Sep '19*

- **Collaborated with Glassdoor**, played a key role in enabling Indeed Apply for jobs on Glassdoor.
- Improved release velocity and maintainability by breaking down the web application into **reliable micro-frontend services** serving UI components.
- Worked on **Indeed Placement** - a platform to easily hire fresh college graduates in India.
  - **Selected for funding** of $500K to work with the internal product accelerator.
  - Conducted market research by visiting employers and colleges for gathering and prioritizing requirements.
  - Handled complete product development single-handedly, and provided technical direction to the team. (Django)

Education

Master of Science in Computer Science *Aug '21 - May '23*

Georgia Institute of Technology, Atlanta, Georgia

- GPA: **4.0**, specializing in **Computational Perception and Robotics**.
- MS Thesis: **Towards safe and efficient learning of dexterous manipulation**.

Bachelor of Technology (Honours) in Computer Science and Engineering *Jul '13 - May '17*

International Institute of Information Technology, Hyderabad, India

- GPA: **9.59** / 10, Class Rank: **2** / 275
- **Best All-rounder Gold Medalist** for demonstrating excellence in academics and extra-curricular activities.

Papers and Patents

Abhineet Jain, Jack Kolb, and Harish Ravichandar. **Constraint Reinforcement Learning for Dexterous Manipulation**. *International Workshop on Safe RL at the International Joint Conference on AI*. 2022. [pdf]

- Analysed a simple geometric constraint for an object relocation task using constraint policy optimization.

Abhineet Jain*, Jack Kolb*, J.M. Abbess IV and Harish Ravichandar. **Evaluating the effectiveness of corrective demonstrations and a low-cost sensor for dexterous manipulation**. *Machine Learning in Human-Robot Collaboration Workshop at ACM/IEEE International Conference on Human-Robot Interaction*. 2022. [pdf]

- Used LeapMotion to collect demons in MuJoCo for learning object relocation via demo-augmented policy gradient.

Vidhem Chhabra, **Abhineet Jain**, Aditya Pandya, David Park and Christian Johanssen. **Multiple Pane Web Display with Dynamic Content**. *U.S. Patent No. 11,283,807*. 2022. [pdf]

- Used inline frames to enable a web experience communicating across multiple independently deployed applications.

Technical Skills

Programming Languages: Java, Python, TypeScript, JavaScript, Go, C++, C
Frameworks, Databases: Spring, React.js, GraphQL, Node.js, Django, MongoDB, MySQL, PyTorch
Tools: MuJoCo, MATLAB, Robot Operating System, Git

Research Experience

Graduate Researcher, Georgia Tech *Aug '21 - May '23*
Advisor: ***Prof. Harish Ravichandar***

- Learning a curriculum of constraints to safely train real robots on dexterous manipulation skills using reinforcement learning techniques.

Visiting Scholar, Robotics Embedded Systems Lab, University of Southern California *May '16 - Jul '16*
Advisors: ***Prof. Gaurav S. Sukhatme, Dr. Oliver Kroemer***

- Explored CNN based Feature Transfer for Robot Affordances [poster]
- Used *TensorFlow* to learn CNN on previously annotated affordance data, and Transfer Learning to learn new affordances (with few samples).
- Annotated *grasp* and *push* data by manipulating PR2 using *ROS*.

Undergraduate Researcher, Robotics Research Center, IIIT Hyderabad *May '15 - May '17*
Advisor: ***Prof. K. Madhava Krishna***

- Incremental Surface Reconstruction and Tracking: Dense CRF for semantic motion labelling, Truncated Signed Distance Field, Ray casting and Medioni's transform for 3D reconstruction of an outdoor scene, using *Kinect Fusion: InfiniTAM* library. (C++)
- Driverless Car Challenge: Part of development of driverless car, worked on camera calibration, motion segmentation, application of B-Spline curve fitting, and obstacle detection.
- Learning affordances from robot environment: Created an environment in simulation for robots to interact with and learn affordances using Reinforcement Learning.

Teaching Experience

Teaching Assistant at Georgia Tech

- **Introduction to Perception & Robotics** with Prof. Matthew Gombolay *Jan '23 - May '23*
- **Introduction to Perception & Robotics** with Prof. Frank Dellaert *Aug '22 - Dec '22*
- **Introduction to Perception & Robotics** with Prof. Seth Hutchinson, Prof. Frank Dellaert *Jan '22 - May '22*

Teaching Assistant at IIIT Hyderabad

- **Computer Vision** with Prof. Anoop M. Namboodiri *Jan '17 - May '17*
- **Computer Programming** with Prof. Anoop M. Namboodiri *Aug '16 - Dec '16*
- **Computer Systems Organization** with Prof. Govindarajulu Regeti *Jan '16 - May '16*
- **Digital Logic and Processors** with Prof. K. Madhava Krishna, Dr. V. Eathakota *Aug '15 - Dec '15*

Achievements

- Awarded **Dean's Merit List** in all semesters at IIIT for being among the **top 5%** students.
- Selected among the **top 20** students from **all over India** for the Viterbi-India program by The Indo-US Science and Technology Forum.
- Ranked **51st** from over 1500 teams in **ACM ICPC** Asia-Amritapuri 2015-16 Regionals.
- Qualified for ACM ICPC Regionals for 3 years in a row, securing **top 100** online and onsite ranks.
- Secured **All India Rank 309** in Joint Entrance Examination (Mains) 2013 among 1.4 million candidates.

Extra-Curricular Activities

Students' Parliament, 2015-17: Elected **Speaker** of Parliament meetings, moderated discussions on matters of student life on campus, and allocated tasks among the members. Served as liaison between faculty, administration and the student community, especially in cases of *disciplinary concerns*.
Overall Coordinator, Felicity Threads, 2016: Led a team of around 40 people to organize college's technical fest including international contests for competitive programming, mathematical quizzing, ML, AI etc. having over 10K participants globally.
Member, Student Induction Body, 2015-17: Helped freshman students in the admission process by answering their queries in liaison with the admissions office, arranged for Welcome Kit, and Orientation tours.
Teaching Volunteer at Ashakiran, 2015-16: Tutored secondary school kids from nearby slums.