

Pratyush Varshney

Software Development Engineer

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Education

Indian Institute of Technology, Kanpur

- Master of Science by Research in Computer Science and Engineering
CPI: 9.00/10.00

Kanpur, India
Jan 2017 - Oct 2019

Kamla Nehru Institute of Technology

- Bachelor of Technology in Computer Science and Engineering
Percentage: 75.92 %

Sultanpur, India
Sep 2009 - Jul 2013

Experience

Microsoft

Software Development Engineer

Dec 2020 - Present

Hyderabad, India

- Working on the servicing stack of update platform for core windows.
- Fixed important bugs to ensure smooth user experience for windows update.

Adobe Systems

Member of Technical Staff II

Oct 2019 - Nov 2020

Bangalore, India

- Implemented analytics on Adobe Inter Process Communication (IPC) for cloud applications. This improved the identification of issues across modules.
- Drove end-to-end design and implementation of Introspection APIs for Unified Extensibility Platform (UXP) for Creative Cloud Extension Platform. These APIs automated the complete documentation of UXP modules without any overhead and constraints on developers.
- Developed Logging module for the Unified Extensibility Platform for Adobe's Creative Cloud.
- Developed the DevTools for internal & external Adobe app developers on the UXP. This increased the productivity for plugin developers by providing features like templates for plugins, live debugging, loading plugin across various applications etc.

Indian Farmers Fertilizer Cooperative

Senior Engineer

Mar 2014 - Dec 2016

New Delhi, India

- Designed and developed a Document Management System using J2EE-struts framework to store documents in the Oracle database. This reduced manual overhead of maintaining and securing the valuable documents.
- Implemented the module of Employee Leaves in the Management Information System (MIS) for the organization
- Created and deployed new forms and reports for the Oracle ERP system as per the users requirements.

Nokia (Formerly Alcatel-Lucent)

Software Engineer

Nov 2013 - Mar 2014

Gurgaon, India

- Developed tool for testing the Session Initiation Protocol (SIP). The tool could simulate SIP calls and interact with the CAMEL stack to generate logs which were further used for debugging.
- Implemented new functional requirements in the flexible and configurable convergent payment system - ICC.
- Drove end-to-end delivery from requirement gathering to implementation of services for SMS and SIP.

Aditya Birla Nuvo Limited

Internship Trainee

📅 Jun 2012 - Jul 2012

📍 Jagdishpur, India

- Developed an online Excel converter in Java for a web application. The converter generated formatted Excel reports based on the data queried from the web interface of the application.

Research Positions

VERIMAG Institute

Visiting Research Scholar

📅 Jun 2019 - Jul 2019

📍 Grenoble, France

- Developed a framework to verify properties of Neural Network controller in a closed loop with a Non-Linear plant.

IIT Kanpur

Senior Student Research Associate

📅 Jan 2017 - Oct 2019

📍 Kanpur, India

- Worked on the synthesis and verification of the controller of the Unmanned Aerial Vehicles (UAV) using Deep learning. The work also focused on the control synthesis of UAVs using Reinforcement Learning techniques.

Publication

👥 Conference Proceedings

- Varshney, P., Nagar, G., & Saha, I. (2019). Deepcontrol: Energy-efficient control of a quadrotor using a deep neural network. In *2019 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)* (pp. 43–50). IEEE.

Academic Projects

- **Neural Network Based Modeling and Control of Quadcopters**

IIT Kanpur

Prof. Indranil Saha

Jan 2017 - Jun 2017

Learned the non-linear dynamics of a Quadrotor using Deep Neural Networks via supervised learning. The framework used px4 as the autopilot and Gazebo as the simulator. The DNN could predict the next state of the quadrotor with high accuracy given its previous state and control.

- **Formal Verification of Artificial Neural Networks: A Survey**

IIT Kanpur

Prof. Indranil Saha

Jul 2017 - Nov 2017

Performed an in-depth survey of formal verification strategies for Neural Networks. Analyzed and compared verification strategies including Abstract Refinement, Integer Constraint Programming and SMT-based techniques.

- **Playing Atari Games using Reinforcement Learning**

IIT Kanpur

Prof. Laxmidher Behera

Jan 2017 - Mar 2017

Developed a reinforcement learning based application in python that could play the Atari pong game with human level expertise using policy gradient techniques.

Technical Skills

- **Languages:** C/C++, Python, Java, JavaScript
- **Libraries/Technologies:** Component Object Model (COM), Oracle Application Development Framework(ADF), J2EE-Struts, Nodejs, Oracle Forms and Reports
- **Robotics:** Robot Operating System (ROS), Gazebo, RotorS, px4-autopilot
- **Machine Learning:** Reinforcement Learning, Tensorflow, Supervised Learning, Eigen, Numpy