

Pratik Bhandari

Email: pratik.bhd@gmail.com
Website: pratikbhd.github.io
Mobile: +1-650-772-1669
LinkedIn: pratikbhd

EDUCATION

Master of Science in Computer Science, GPA: 3.8
University of Arizona

May 2020 (Expected)
Tucson, AZ

Coursework: Algorithm Design and Analysis, Computer Vision, Machine Learning, Neural Network, Probabilistic Graphical Models, Data Visualization, Computer Security, Natural Language Processing, Advanced Operating Systems

Technical Skills: Python(4 yrs), C/C++(3 yrs), MATLAB(3 yrs), Javascript, D3, Java, Scala, NodeJS

Bachelor of Engineering in Electronics and Communication Engineering, GPA: 3.94
Tribhuvan University

Sept 2016
Kathmandu, Nepal

Coursework: Data Structures and Algorithms, C/C++, Computer Graphics, Computer Network, Image Processing and Pattern Recognition, Big Data, Project Management, Microprocessor

WORK EXPERIENCE

Graduate Research Assistant
University of Arizona

Aug 2018 - Present
Tucson, AZ

- **Automatic Vulnerability Detection:**

- Reasoning about end-to-end information flow in software systems that may contain dynamically modified code. Specifically worked with various fuzzers for JIT compilers along with dynamic detection of race conditions on such compilers.
- Currently, looking at how WebAssembly (**wasm**) can be used to develop noble cryptojacking mechanisms.

- **World Modelers:**

- Built a tool in **Python** focusing around program analysis and representation for the automatic conversion of FORTRAN code to Python code.
- Integrated above toolkit into Delphi, a framework for assembling, exporting and executing executable DBN models built for the DARPA World Modelers Program.

Associate Security Analytics Engineer
LogPoint Nepal

July 2017 - July 2018
Lalitpur, Nepal

- Performed log inspection and analysis from different sources - such as Windows, Cisco and Salesforce.
- Built robust plugins using **Python** which aided in a 40% increase in threat detection.
- Identified critical SIEM use cases and played with user stories to generate various POCs.
- Provided rapid and reliable solutions to emerging threats such as WannaCry, Petya, Meltdown and Spectre among others.
- Involved in first-hand customer interaction to solve issues pertaining real-world business cases.

Software Developer
LIS Nepal

Nov 2016 - June 2017
Lalitpur, Nepal

- Designed a data integrator module in **SQL** that increased data transfer speed by 30%.
- Developed and maintained data warehouses for national and international clients, bringing scalable solutions for retail companies.
- Developed automated customer service modules using IBM Watson, **Python** and **Javascript** for the day-to-day retail activities of customers (15% increase in customer satisfaction).

Intern
Verscend Information Technologies

June 2016 - Aug 2016
Kathmandu, Nepal

- Enhanced and improved the course project *Swarm Intelligence Based Maze Solver* in collaboration with trained professionals from the industry.

PROJECTS

WatsonBot for Question Answering

2019

Implemented a Watson-like question answering bot using **Scala** which answered Jeopardy questions using Wikipedia articles as its reference. Integrated multiple NLP and information retrieval algorithms to achieve an accuracy of **45%** for the best answer.

Log Structured File System

2019

Designed and implemented a log structured file system for Linux using **C++** which was mounted on a flash device and used the FUSE user level file system interface to intercept all file system calls.

Swarm Intelligence Based Maze Solver

2016

Enhanced and implemented maze traversal algorithms using **C** on a pair of communicating bots. Designed and programmed the bots using **Arduinos** to efficiently traverse and solve a maze in the shortest time and path.

ParkMandu

2016

Developed a prototype of a parking management system to minimize parking congestion. Implemented **Python** along with Image Processing to distinguish between parked cars and open parking spaces.

3D Graphical Modeling of a Human Hand

2014

Developed a 3D model of a human hand using **Python**. Designed and loaded the hand frame into a GUI taking into consideration light, shadows, POV and viewing distance.

AWARDS AND HONORS

Ncell Excellence and Scholarship Award, Nepal

2014-2017

Received a National Excellence Award for 4 years for securing the first position on all the finals of Undergraduate studies.

JENESYS 2015, Japan

Jan 2016

Selected for and attended the Japan-SAARC Network Program of People-to-People Exchange, SAARC Countries, 1st Batch: Energy.