

Asutosh Palai

✉ palai@gatech.edu

☎ +1-470-629-5786

EDUCATION

AUG 2018 - PRESENT **Master of Science**
COMPUTER SCIENCE
Georgia Tech

JULY 2014 - MAY 2018 **B.Tech. (Hons.)**
COMPUTER SCIENCE
IIT Roorkee
CGPA: 9/10

SKILLS

LANGUAGES Java, C, C++, PHP, Python,
Common Lisp, Javascript,
CSS, Haskell, Bash Shell

TECHNOLOGIES IDA Pro, x64dbg, Laravel,
Node.js, SQL, MongoDB,
Docker, React, WebRTC

LINKS

GITHub github.com/asutoshpalai
BLOG blog.asutoshpalai.in
LINKEDIN [linkedin.com/in/asutoshpalai](https://www.linkedin.com/in/asutoshpalai)

ACHIEVEMENTS

2017 **CSAW CTF (NYU)**
Winner in India region, 10th overall

2017 **Microsoft code.fun.do hackathon**
College winner and national finalists

2016 **Microsoft Build The Shield CTF**
National finalists

2014 **JEE Mains AIR 336, JEE Advanced AIR 638**

PROJECTS

CodeVillage

Designed and developed an online sports programming platform using **Laravel, PHP, MySQL and Redis**. Improved and integrated the judge in **C++** with the new platform. It hosts competitions which see international participation.

VR Classroom

Built the P2P networking for interaction during video lectures in a VR environment using **WebRTC**. Also added support for live captions, on-line references and 3D models to be projected.

Predicting Network Traffic

Performed analysis of network traffic on the institute intranet portal to forecast future values. Along with regular time-series analysis (ARIMA), Generalised Autoregressive Score modelling and LSTMs was used.

Natural Language Does Not Emerge 'Naturally' in Multi-Agent Dialog

Implemented the paper by *Kottur et al.* & achieved higher accuracy by restricting search space in task domain and reducing initial penalties.

WORK EXPERIENCE

Malware Analyst APRIL 2018 – JULY 2018
Hispacec Sistemas S.L.

Analysed banking **malware** both on **Windows and Android platform**, kept track of new malware which might target the clients and **analysed suspicious files** (PDF, EXEs, DOCs) submitted by them.

Summer Analyst MAY 2017 – JULY 2017
Goldman Sachs

Developed an archival system and data exporter for Order Management System in Equities One Delta team using **Java (Vert.x), AMPS, MongoDB and React**. Also evaluated PostgreSQL, Neo4j for storing the order history.

Student Developer - Ruby Org. MAY 2016 – AUGUST 2016
Google Summer of Code

Designed and developed plugin system for **Bundler**, the popular package manager for **Ruby** language under the Ruby organisation. It allowed addition of custom features like **using gems from different sources, life-cycle hooks and custom commands**.

Backend Developer DECEMBER 2015
Razorpay

Performed bug fixes and feature additions on the backend in **PHP (Laravel)** and DevOps works with **Ansible** to automate setting up of the development environment.

RESEARCH

Learning and Generating Firewall Rule

Generating **firewall rules** using ensemble method of **Logical Analysis of Data** and a jointly-trained Autoencoder-SVM model.

Blockchain Summarization

Proposed a scheme to *reduce the storage space of blockchain* which achieved 45% compression on Bitcoin blocks. [paper]

ACTIVITIES

Open Source/GitHub

- **Pythia** - An operating system from scratch with its own boot-loader. It has a working shell, portable memory management system and other necessary drivers. [link]
- **Indiechain** - A simple implementation of basic blockchain protocols for prototyping and testing new ideas. [link]
- Contributed bug fixes and feature addition to other projects like, **Radare2, Bundler, Binwalk** etc.

Campus Talks and Hackathons

- Gave **lectures and talks** on the subjects of *web development, Linux, web security and binary reversing* at IIT Roorkee.
- **Organized hackathons, coding weeks and other competition** for campus students at IIT Roorkee.

Miscellaneous

- **CTFs** - A frequent CTF player solving binary, web and reversing challenges.
- **SDSLabs** - An active member of the technical group and also managed the group as Join Secretary at IIT Roorkee.
- **Watch Out** - Web-head and Join Secretary of the campus media body at IIT Roorkee.
- **InfoSecIITR** - Founding member of the information security group at IIT Roorkee.