

# Asutosh Palai

✉ palai@gatech.edu

## Education

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2018 - present	Master of Science Computer Science Georgia Tech
2014 - 2018	Bachelor of Technology Computer Science IIT Roorkee CGPA: 9/10

## Skills

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Languages	Java, C, C++, PHP, Python, Common Lisp, Javascript, Haskell, Bash Shell, CSS
Technologies	IDA Pro, Radare2, x64dbg, Laravel, Node.js, Git, Subversion, MongoDB, SQL

## Links

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GitHub	asutoshpalai
Blog	blog.asutoshpalai.in
LinkedIn	asutoshpalai

## Achievements

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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

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### CodeVillage

Designed and developed Codevillage, an online sports programming platform with its own judge. Also, improved and integrated the existing judge with the new platform. It hosts competitions which see international participation.

### 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.

### VR Classroom

Built the peer-to-peer networking for interaction during video lectures in a VR environment. Also added support for live captions, online 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.

## Work Experience

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Malware Analyst April 2018 – July 2018  
Hispasec 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 submitted by them.

Summer Analyst May 2017 – July 2017  
Goldman Sachs

Developed model of an archival system and data exporter from the core platform for Order Management System in Equities One Delta team using Java and MongoDB.

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.

Backend Developer December 2015  
Razorpay

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

## Research

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### Learning and Generating Firewall Rule

Generating firewall rules using an ensemble method that uses Logical Analysis of Data along with 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

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### 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.
- Organized hackathons, coding weeks and other competitions for campus students.

### 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.
- Watch Out - Web-head and Join Secretary of the campus media body.
- InfoSecIITR - Founding member of the information security group at IIT Roorkee.