



# Francis Alexander

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Highly Passionate Security Researcher / Engineer with Interest in various domains, actively on Application & Cloud Security, DevSecOps, Distributed Systems, NoSQL Security, Container Security, Infrastructure Security.

Automation Love, authored & co-authored some of the notable open source projects like NoSQL Exploitation framework, Garfield(A pentesting framework for Distributed Systems.), NoPo (A NoSQL Honeypot).These can be found @ <https://github.com/torque59>.

Occasionally rambles regarding security findings and research @ <https://francisalexander.in/blog/>.

As part of publishing my research, spoke @ a bunch of conferences: Troopers 2017, BruCON 2017, PHDays 2017, Insomni'hack, Hack in the Box 2014,Hack in Paris 2014,C0c0n 2014,44CON UK,HITCON 2014,DerbyC0n USA, Defcon Bangalore and Defcon Kerala

Delivered trainings @ some of the prestigious security conferences like Blackhat, OWASP Appsec EU, Hack In the Box, BruCON, NullCON which included students from companies like Apple, Intel, Adobe, Philips, PWC etc.

## Work experience

### Nash (Remote)

December 2018 – Present

Senior Application Security Engineer

Role at Nash.io:

- Setting up security from scratch, Integrating Product Security Engineering and Security Culture.
- Security Architecture review for new product features.
- Enabling Cloud security modules for GKE and Threat Detection
- Security Review for the application Stack (kafka, zookeeper, redis, postgres)
- Infrastructure and Web application security assessments.
- Code Reviews for Infrastructure components - Terraform, Backend - Python, Elixir.
- Automation and Integration of security modules into the CI/CD pipeline (SAST, Dependency scanning, Secret Detections, Container Vulnerabilities & Runtime Container Security, Baseline Web Scanning)

### Investnet Yodlee

Feb 2018 – December 2018

Lead Application Security Engineer

### Investnet Yodlee

June 2017 – Jan 2018

Senior Application Security Engineer

### Investnet Yodlee

June 2016 – June 2017

Application Security Engineer

Role at Investnet|Yodlee involves:

- Product Security Engineering and architecture review for new products.
- Architecture review for Security in DevOPS

- Web application security assessments, Red-teaming and code reviews.
- Automated security analysis integrated within the development workflow and to improve the accuracy and coverage of these tools.
- Developer Trainings & Security Response for Bug reports.

## Flipay

June 15 – June 2016

Backend Engineer

- Involved in building REST API for the products to communicate to (NodeJS & Python).
- Handle & Build API Security and Structure.

## Investnet Yodlee

June 14 – June 2016

Intern Application Security Engineer

## Security Portfolio

Research Publications:

- How we hacked Distributed Configuration Management Systems (2017).
- NoPo - The NoSQL Honeypot Framework (2015).
- Exploiting NoSQL Databases Like Never Before (2014).
- Pentesting NoSQL Databases Using NoSQL Exploitation Framework(2014).
- Bypassing your SQL Injection Filters (2013).

Conference Speaker/Trainer:

- Troopers (2017,2018,2019)
- BruCON (2017)
- Insomn'hack (2017)
- PHDays (2017)
- Hack In The Box (2014) ,
- Hack In Paris (2014),
- 44Con (2014)
- HITCON 2014,
- Nullcon Goa (AMMO) (2014),
- c0c0n (2014,2015)

Authored Open Source Security Tools:

- NoSQL Exploitation Framework (torque59/NosqlExploitation-Framework/)
- Garfield Security Framework (torque59/Garfield)
- NoPo - NoSQL Honeypot Framework (torque59/nosqlpot)
- JMXSecurity (torque59/jmxsecurity)
- Python Security Bootcamp (torque59/python-security-bootcamp)
- FileDrupe Online Multi AV Scanner

Vulnerabilities Found:

- Polycom IP Phone Arbitrary Memory Read
- OrientDB Remote Code Execution

VAPT for Clients:

- Over 5+ Assessments for 3rd party clients
- Client assessments include infrastructure security assessment, siem management with ELK, red-teaming, internal infra and hardware pentesting and threat assessment.

## Education

### B.Tech

May 2012 – May 2016

Amal Jyothi College of Engineering

B.Tech in Computer Science and Engineering.

## Interests

- Security research and development.

- Recent interests moved to reversing and fuzzing.
- Music and movies
- Travel buff.

## References

References available upon request.

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