

Venkkatesh Sekar

vsekar.me | venkkatesh.sekar@gmail.com | +44 7935168549

EDUCATION

UNIVERSITY COLLEGE LONDON (UCL)

MSC IN INFORMATION SECURITY
Exp. Aug 2021 | London, UK

NIT, TRICHY (NITT)

B. TECH IN COMPUTER SCIENCE AND ENGINEERING
Grad. May 2018 | Trichy, India
Cum. GPA: 8.5 / 10

SHRISHTI VIDYASHRAM

Grad. May 2014 | Vellore, India
Graduating Percentage: 95%

LINKS

GitHub:// Spockuto
Medium:// @venkkateshsekar
LinkedIn:// venkkateshsekar

COURSEWORK

POSTGRADUATE

Cryptography
Computer Security I II
Malware
Cryptocurrencies
Distributed Systems and Security

UNDERGRADUATE

Operating System
Network Security
Database Management
Compilers
Algorithms
Data Structures
Artificial Intelligence

SKILLS

PROGRAMMING

Over 10000 lines
• C/C++ • Python • PHP

Over 5000 lines
• Java • JavaScript

FAMILIAR

• HTML/CSS • Shell • Node
• Git • MySQL • MongoDB
• Docker • TeX • Go

INTERESTS

Cryptographic Protocols
Binary Analysis
Privacy Preserving ML
Post Quantum Algorithms

EXPERIENCE

UNIVERSITY OF SURREY | SECURITY RESEARCHER

Oct 2020 - Present (PT) | Oct 2019 – Sep 2020 (FT) | Guildford, United Kingdom

- Developed a real-time vulnerability detection framework for **ASTRID**, an EU funded platform for the secure orchestration of micro-services in virtualized infrastructure.
- In-depth analysis of virtualized functions through inter-working of **fuzzing, concolic execution and remote attestation** algorithms, integrated by eBPF hooks.
- Published two papers in IJIS on concurrent work in cryptography and cybersecurity as part of **Surrey Centre for Cyber Security (SCCS)**

ORACLE | APPLICATIONS ENGINEER

June 2018 – August 2019 | Hyderabad, India

- Worked on **Oracle's HCM** enterprise software, primarily in **Java** and **Oracle ADF**.
- Designed an fully automated **I-9 Employment Verification System** for HCM using a custom XML parser and SOAP requests. Brought down workflow time by 2 weeks.
- As part of Fusion HCM Checklists team, built faceted search, calendar exporter and hash-based access control for the HCM Onboarding component.

MOZILLA | SOFTWARE DEVELOPER

September 2016 – April 2017 | github.com/Sachin-A/Blake2

- Implemented **BLAKE2 & ARGON2** from scratch, a set of **fast hashing** libraries in **C** for **Network Security Services (NSS)** as part of **Mozilla's Winter of Security**

PROJECTS

PASE June 2017 - July 2017 | github.com/Spockuto/surrey-paks | NodeJS

- Encrypted file storage web application** to store, search and retrieve encrypted files based on encrypted keywords or tags.
- Authentication of users occur using high entropy keys derived from passwords using a custom two-server based secret-sharing cryptographic protocol.
- SJCL** and **WebCrypto API** was used to implement the underlying cryptographic infrastructure and achieve native encryption speeds in JavaScript

VOICE-TUTOR July 2016 | github.com/thakkarparth007/voice_tutor | JS

- Multilingual Call based automated tutor** capable of delivering **audio lessons, progress tracking and clarifying doubts**.
- Built using **Google Cloud Services** for real-time translation, **Exotel API** for call routing and **Wolfram Alpha** for custom queries.

BLOCKHASH Dec 2015 | pypi.python.org/pypi/blockhash | Python

- Parallelized SHA2** for large files using multi-threading and custom Merkle trees.
- Achieved **50%** performance boost and **3000** package downloads.
- Support for **SHA3** was added later at github.com/Spockuto/sha3-parallel.

AWARDS

2016	2 nd	InOut , India's largest student based Hackathon, NIT Surat.
2016	Finalist	Capture the Flag, Microsoft Build the Shield
2016	Top 200	Google Capture the Flag worldwide
2014	1 st	Mathematical Quiz, State Level, VIT
2006	1 st	Japanese Soroban Mental Maths National Competition

PUBLICATIONS

- Manulis, M., Bridges, C. P., Harrison, R., Sekar, V., Davis, A. (2020). Cyber security in New Space. International Journal of Information Security. DOI
- Chen, L., Huang, K., Manulis, M., Sekar, V. (2020). Password-authenticated Searchable Encryption. International Journal of Information Security. DOI