

Hinddeep Purohit, M.Sc. Cybersecurity (Thesis)

✉ hinddepp@appstasy.in | 📞 +1 (450) 750-3196 | [in LinkedIn](#) | [GitHub](#) | [LeetCode](#) | [Blogs](#)
<https://hinddepp.appstasy.in> | [Videos](#) | [English - C2, French - B2](#) (Bilingual) | ✓ Canadian open work permit

Education

Jan 2022 – Oct 2024 📖 [Masters In Information Systems Security, Concordia University](#) 📍 Canada | CGPA: 3.55/4.30
Aug 2016 – May 2020 📖 [Bachelor of Computer Engineering, RK University](#) 📍 India | CGPA: 8.90/10.00 | [Student of the year](#)

Coding Contests

[CodeVita by Tata Consultancy Services](#) | Rank - $\frac{590}{99,473}$

Experience

Apr 2022 – Oct 2024 📖 **Research assistant, [Ericsson](#)/Concordia, Canada** | Supervisors: [Dr. Yosr Jarraya](#), [Dr. Makan Pourzandi](#), [Dr. Suryadipta Majumdar](#), [Dr. Lingyu Wang](#)

- **Summary:** SDN, Socket Programming (C++), 3GPP, Virtual RAN, 5G Core, SFC, Cloud-Native apps, Containers, Kubernetes
- Automated deployment of VMs with `ansible` and management with `vagrant` • Leveraged `helm` charts to deploy `free5GC` and `OAI 5G microservices` on `Kubernetes` • Compiled `open5GS` using `CMAKE`, built `container` images, deployed it on `EKS` and monitored and logged the cluster's with `Prometheus`, `Grafana` and `Fluentd` • Audited the clusters for vulnerabilities with `trivy` • Analysed traffic with `Wireshark` and `tcpdump` • Automated deployment of AWS infrastructure with `Terraform` • Performed `static code analysis` of `IaC` files
- Leveraged C++ `socket programming` to build packet capturing proxy, `containerized` it and injected it as a `sidecar proxy` in `5G Core` • Manipulated packets with `scapy` • Implemented `VNFs` in C++ • Hosted `VNF chains` on `EC2` across AWS regions with `VPC peering` • Handled routing, `DNS` across public and private subnets • Hardened the security of `EC2` with `ACLs` • Monitored performance of `EC2` with `iPerf`
- Utilised `Python` to perform anomaly detection and time series analysis • Trained, modified and evaluated `GAN-based ML models` • Visualized data using `matplotlib` and `Pandas`
- Analyzed `3GPP` docs to support research

May 2020 – May 2022 📖 **Co-Founder, [Appstasy LLP, India](#)**

- Collaborated with clients • Managed a team of developers • Designed front-end (`Angular/Ionic/Android/iOS`) and back-end (`Python/NodeJS`) of social media, e-commerce, e-learning and ride-sharing web and mobile applications (hybrid and native) • Integrated and tested `RESTful APIs` • Wrote `plugins` for `Ionic` (Web, Android, iOS) • Created `CI/CD` pipelines for web and mobile apps and integrated automated testing with `bash scripts`
- Prepared DB design, wrote and optimized queries for social networks with `Neo4J`, shopping carts with `Memcached` and Inventory with `MongoDB` • Developed `live chat` with `web sockets` • Enabled `Push Notifications` with `Firebase (GCP)` • Created real-time GPU accelerated `Image and video filters` in `JavaScript` • Implemented `Geo-location` based features

May 2018 – Jul 2018 📖 **[Cybersecurity Intern](#), Tata Consultancy Services, India** | Supervisor: [Srimant Acharya](#)

- Web app development with `Angular` and `NodeJS` • `Java EE` • `OWASP Top 10` • `Pentesting` on `RootMe` and `OSCP` proving grounds
- Performed dynamic testing (`DAST`) with `Burpsuite`, `nmap`, `Nessus`, `Metasploit` and `MobSF` • Performed static code analysis (`SAST`)
- Attended scoping calls • Analysed client requirements • Prepared documentation and reports detailing the vulnerabilities uncovered and suggested plan of action • Participated in meetings • Gave presentations

Research Publications

- 1 M. Oqaily, H. Purohit, Y. Jarraya, *et al.*, "ChainPatrol: Balancing Attack Detection and Classification with Performance Overhead for Service Function Chains Using Virtual Trailers," in *33rd USENIX Security Symposium (USENIX Security 24)*, 2024, pp. 3441–3458. 🌐 URL: <https://www.usenix.org/system/files/usenixsecurity24-oqaily.pdf>.
- 2 A. S. M. Asadujjaman, M. E. Kabir, H. Purohit, *et al.*, "5GFIVer: Functional Integrity Verification for 5G Cloud-Native Network Functions," in *2022 IEEE International Conference on Cloud Computing Technology and Science (CloudCom)*, 2022, pp. 162–169. 🌐 URL: <https://arc.encs.concordia.ca/papers/5GFIVer.pdf>.

Grants and Patents

\$30,000 CAD [MITACS-200010058]

\$10,000 CAD [FRS-300002429 (VE0277)]

2 Provisional Patents

Conferences and Presentations

[Ericsson Developer Conference 2024](#)

Ericsson's Quarterly Meeting 2024

[ICT4SD 2020](#)

Certifications

2016

- [Associate Java Programmer, Oracle](#)
- [Professional Java Programmer, Oracle](#)

2017

- [A+, CompTIA](#)
- [Network+, CompTIA](#)
- [Associate C++ programmer, C++ Institute](#)