Pooja Rajan

213-248-3873 | pjrjn285@gmail.com | linkedin.com/in/pooja-rajan | crimsondevil.github.io

Education

University of Southern California — Los Angeles, California, USA
Master of Science in Computer Science (Computer Networks) — *Jan 2019 – May 2021*

SRM Institute of Science and Technology — Chennai, Tamil Nadu, India
Bachelor of Technology in Software Engineering — *Jul 2014 – May 2018*

Technical Skills

Languages: C/C++, Python, MySQL, NoSQL, Java **OS**: Windows 10, Ubuntu 16.04, RedHat 7.4
Web Development: HTML/CSS, Bootstrap, PHP, JavaScript, JQuery, AJAX, RestAPI, ReactJS
Developer Tools: GCP, Atom.io, CrypTool 2, Solr, GitHub, Eclipse, VS Code, Rational Rose, Draw.io, JUnit, BlueJ
Libraries & Packages: hashlib, mymerkle, pyaes, pickle, IP-API, Google GeoCode, forecast.io, Tshark, Wireshark, netdb.h, netinet/in.h, sys/socket.h, arpa/inet.h, sstream.h, NetworkX, JSoup

Experience

Software Intern — Jun 2018
Computer and IT Department – Bhilai Steel Plant — *Bhilai, Chhattisgarh, India*
- Implemented PageRank algorithm using JSoup & NetworkX in a pre-existing Solr-PHP based Search Engine.
- Compared the ranking of pages displayed for the above-performed PageRank against the already-existing Lucene.
- Also implemented Norvig's Spelling Correction Program to enhance the spell-correction feature.

Vocational Trainee — Jun 2016
Intergrated Control Systems Department – Bhilai Steel Plant — *Bhilai, Chhattisgarh, India*
- Generated public and private keys for users by applying the RSA key generation algorithm that uses the Miller-Rabin primality test.
- Implemented AES-128 encryption using pyaes to encrypt user files for secure transmission.
- Encrypted the AES keys using the receiver's public key to ensure the secrecy of the encrypted file.

Projects

Secure E-Voting System | *Python, RSA Encryption, Merkle Tree Hashing, SHAKE-256* — Jan 2020 – Apr 2020
- Registered the voters with a unique ID using SHAKE-256 and also generated public, private keys for that voter.
- Created a unique ballot for the voter to cast his vote that is encrypted by RSA algorithm using the voter's private key and decrypted by his public key while counting and auditing.
- Used SHA-256 and Merkle Tree Hashing to store the votes for each candidate to prevent tampering.

Delay Calculation System | *C++, TCP and UDP Sockets , Static and Dynamic Ports* — Sep 2019 – Dec 2019
- The Client sent an ID and the size of a transmitted file to the Main Server over a TCP connection.
- The Main Server then used a UDP connection to search the ID in the Database Server and if found, sent further data about the file to the Calculation Server to estimate the various delays in the network.
- A Monitor connected to the Main Server over TCP tracked all the events happening across all the servers.

DarkSky | *PHP, JS, HTML, CSS, Bootstrap, XML, JSON, GCP App Engine* — Oct 2019 – Nov 2019
- A PHP-based website that took an address input from the user. The current location is fetched using IP-API.
- Returned the current weather report for the above location along with a week's forecast using the APIs, Google GeoCode and forecast.io. It also displayed a graph depicting the hourly temperature across the day.

Publications

Intelligent Wireless Sensor Networks for Precision Agriculture — Feb 2020
https://doi.org/10.1007/978-981-15-0199-9_15
D.Anitha, V.Shelke, C.G.Anupama, P.Rajan. "Intelligent Wireless Sensor Networks for Precision Agriculture." In: *Advances in Intelligent Systems and Computing, Springer*, Singapore vol.1056, pp.167–181.

Key Management for Enabling Security against Insider Threats in Body Area Networks — Mar 2018
https://acadpubl.eu/jsi/2018-118-20/articles/20b/46.pdf
C.G.Anupama, D.Anitha, P.Rajan. "Key Management for Enabling Security against Insider Threats in Body Area Networks". In: *International Journal of Pure and Applied Mathematics* vol.118 (No.20B), pp.1021–1027.