SWATHI G. NAYAK

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EDUCATION

MS in Embedded Systems May 2017
University of Pennsylvania (Philadelphia, PA)

BE in Instrumentation Technology May 2014
B.M.S College of Engineering (India)

TECHNICAL SKILLS

Programming: Java, Android, C, CAPL, HTML, CSS

Tools: CANoe, CANalyser, Eagle CAD, MATLAB, LabVIEW

Hardware: RF tech, mbed, Arduino, Raspberry Pi

PATENTS

- Application Number 62/347,321 - 'Improved Expression of Breast Milk via Automated System and Method for Managing Pumped Breast Milk', filed on 8 Jun 2016.
- Application Number 4477/CHE/2013 - 'Panic detection device and methods thereof'
- Application Number 3911/CHE/2013 - 'A method and system to find precision key from a plurality of keys for a lock'

CONFERENCE PAPER

- Namratha SN, ***Swathi N***, 'Embedded Web Server for WSN', ICCSE-2012.

WORK EXPERIENCE

Co-Founder & CIO — Keriton Inc. (Philadelphia, PA) — Feb – Aug 2016

- Co-founded a startup, in charge of writing business plan, product development, beta release, fund raising, supply chain management, market research and hiring
- Designed an IoT-based "Pumped Breast Milk" management solution for hospitals

Software Engineer — Delphi Automotive Systems (India) — Jul 2014 – Jul 2015

- Generated test cases and wrote C libraries for medium range radar and vision-based ECU for cruise control

PROJECTS

1. Web and application server: Developed an HTTP server that runs Java servlets for static content and emulate a full-fledged application server that runs servlets for dynamic Web applications.
2. Distributed chat system: Designed and implemented a reliable, dynamic, multithreaded UDP based distributed chat system using Socket API in C++; allowed arbitrary size groups to send and receive message in real time; incorporated features like leader election, totally ordered messages, zero duplication, encrypted chat messages.
3. Modelling of a processor pipeline with implementation of branch prediction and caches: Wrote a Java program to simulate in-order and out-of-order pipeline; incorporated branch predictors, maintained cache coherency of instructions and data cache at L1 level and analyzed the performance of the pipeline.
4. Digital Urimeter: Built backend to acquire and store data locally onto a secure database-SQL, python; UI mocking the patient monitoring system-HTML, CSS, python and flask; applied temperature compensation technique on load cell to achieve an accuracy of +/- 1cc; RF based login system.
5. 'RotMeNot': Designed a software application on Ionic which runs seamlessly on all platforms, that provides the user a real time inventory status of all the food item in personal space using optical character recognition; built backend using python and flask.
6. Pacemaker challenge: Designed a formally-verified model for DDD mode pacemaker on UPPAAL. Implemented a real-time interrupt-driven pacemaker by synthesizing code as per UPPAAL model on mbed platform. Formulated test and assurance cases of the design, model, implementation and evidence of the verification.
7. Electronic voting system: Designed and implemented an electronic voting system using the Socket API in C (UDP, TCP and Sun remote procedure calls); allowed clients to vote for candidate in an election over a network.
8. 'Ping' tool: Developed a tool using C to analyze and study latency and throughput over the network by emulating the 'ping' command to measure performance of the server systems; simulated network delays and analyzed its effect on latency and throughput.