SWATHI G. NAYAK

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EDUCATION

MSE in Computer and Information Science |Major 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, C, Python, HTML, Android, CAPL
Tools: CANoe, CANalyser, MATLAB, LabVIEW,Eagle CAD
Hardware: RF tech**,** Raspberry Pi, mbed, Arduino

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 of key from a plurality of keys for a lock'

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
- Designed test cases and C libraries to test diagnostics over CAN network for medium range radar and vision-based Electronic Control Unit in 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. Implemented features like thread pool, blocking queue, retrieving canonical path and generating HTTP response with status code.
2. **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.
3. **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.
4. **Modeling 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.
5. **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; RFID based login system using RC522 and ARM Cortex M3 micro-controller based particle photon.
6. **'RotMeNot':** Designed a software app on Ionic, runs seamlessly on all platforms, that provides the user a real time inventory of all the food item in personal space updated using OCR; built backend using python and flask.
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.