Jay Nathani

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EDUCATION:

Stony Brook University, SUNY, Stony Brook, NY — August 2015 - December 2016
Masters of Science in Computer Engineering, GPA: 3.5/4.0

Sardar Vallabhbhai Patel Institute of Technology, GTU, Ahmedabad, GJ, India — August 2011 - June 2015
Bachelors of Engineering in Electronics and Communication Engineering, GPA: 7.48/10

SKILLS:

Programming Languages:	Java, C, C++, Python
Web Technologies:	HTML, CSS, J2EE, jQuery, JSP, Spring ORM & MVC, XML, Servlets, HTTP REST, JSON
DBMS:	MySQL, Oracle, JDBC, Hibernate, HQL
HDL:	SystemVerilog, x86 Assembly
Tools:	Simulink, MATLAB, LaTeX, PSoC Designer
Communication Protocols:	SPI, UART
Operating Systems:	Windows, Android, OS X(UNIX), Linux, Raspbian, RTOS
Virtual Machine:	VirtualBox
Certificates:	Industrial training in Android app development

PROFESSIONAL EXPERIENCE:

GLOBAL IT EXPERTS INC., *Java Developer,* TX, USA — March 2017 – Present

- Developed a Web application using Spring framework in Maven (J2EE perspective) to retrieve data from the user and store in MySQL database. Used Hibernate and wrote queries in HQL.
- Used Tomcat sever to host the application initially. Used Git for version control.

FAST TRACK INC., *Project Intern (Final Year Project – Wireless Haptic Panel)*, GJ, India — June 2014 - May 2015

- Led a group of three and developed a control panel using Raspberry Pi 2.0 to wirelessly control electronic devices.
- Designed a collaborated Android app that could operate the relays through Wi-Fi for short proximity. Otherwise, a static IP for the controller was used and fed to the android app.
- Remodeled a control panel for the industrial giant ABB for testing and simulation of density sensors in GIS (Gas Insulated Switch gear) and PASS (Plug and Switch System) hybrid switch gear, that could be operated manually and wirelessly.

RESEARCH EXPERIENCE: — May 2016 - September 2016

- Carried out Summer Research on the use of IoT devices to establish cyber-attacks like Botnet and Ransomware.
- Researched the state of the art ARM cortex controllers embedded with TrustZone technology and tampering protection.

ACADEMIC PROJECTS:

Stony Brook University Projects, Stony Brook, NY

- *Course name:* Hardware-Software Co-Design of Embedded Systems — October 2016 - December 2016
  - Programmed a self-improving algorithm to optimize the amount of hardware and software implementation required when a Fast Fourier Transform is executed.
  - The Fast Fourier Transform was coded in PSoC and compiled using a C compiler and was separated in different nodes. An estimation of the execution in assembly language was calculated.
  - The Simulated Annealing algorithm was programmed in C++ pertaining to the cost function that included MAC usage, memory usage and number of clock cycles of each node. An effective partition in Hardware and Software nodes was the result at the end with minimum cost.
- *Course name:* Hardware-Software Co-Design of Embedded Systems — September 2016 - October 2016
  - Developed a sound based stop watch using the PSoC embedded system kit.
  - Programmed it for a State-flow with 5 main states including Memory state, Push button controlled state, Sound measurement mode timer state, Accuracy state (1sec, 1/2sec, 1/10sec) and Microphone Sensitivity state.
  - Verified the correctness of the state-diagram by simulating it using State-flow on MATLAB.
- *Course name*: Computer Architecture — January 2016 - May 2016
  - Constructed a 7-stage pipelined Instruction Set Architecture of a Synergistic Processing Unit using SystemVerilog.
  - Detected and rectified major hazards like Data Hazards (RAW and WAW), Structural Hazards and Control Hazards (branch conditions).
  - Developed a parser in C++ to convert assembly code into machine level 32 bit binary instructions.
- *Course name*: Pattern Recognition — January 2016 - May 2016
  - Programmed the Data Mining algorithm Star Cubing, FP-Growth and Decision tree induction to compute Iceberg cubes, mine frequent item-sets and classification of database. Programmed partly Java and partly in C++.