2016 ELECTRICAL ENGINEERING

Shiva Talwar

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TECHNICAL PROFICIENCIES

- Exceptional experience with full stack software development including Java, Spring, React/Redux/Immutable, HTML5, CSS3
- Deep understanding of the architectures, protocols and algorithms underlying modern distributed systems
- Comprehensive experience with unit/integration test frameworks such as jUnit, Mockito, Enzyme, Chai, Cucumber, and Mocha
- Practical experience with Linux kernel development alongside ARM based FPGAs and application-specific IC systems
- Working experience with image processing such as template matching, finding contours, and object character recognition
- Excellent understanding of embedded systems, sync/async high-speed serial communication protocols such as I²C, RS232, and SPI
- Proficient knowledge of low-level programming on various microprocessor architectures using JTAG debugging tools
- Expert knowledge of all native AWS tools (Amazon CF, CDK, IAM, ES, DynamoDB, S3, SQS, SNS, API GW, Lambda, CW, ECS, ECR, EC2, WAF, CodePipeline, CodeBuild), serverless, and Okta, Slack, GitHub apps

EDUCATION AND SKILLS

University of Waterloo, Waterloo, ON - *April 2016* Sep 2011 - April 2016
Honours Bachelor of Applied Sciences, Electrical Engineering

Relevent Courses: Data Structures & Algorithms, Distributed Computing, Embedded Systems, Algorithm Design & Analysis, Radio & Wireless Systems (RF), Artificial Intelligence, Machine Learning, Analog & Digital Communication

Languages
C, C++, C#, VHDL, Java, Python, ASP.NET, SQL, MATLAB, XML, Assembly, Javascript, HTML5, CSS3, GWT, AngularJS, Node.js, JSON, React, Redux, Reselect

Software
Visual Studio, Eclipse, VisualDSP++, Altium, NI Circuit Design Suite, MultiSim, Verilog, Xilinx Design Suite, Android SDK, IntelliJ, Selenium, JIRA, Jenkins, VMware, Tomcat

Hardware
ARM, Arduino, FPGA (Altera Cyclone Series, ZedBoard)

Additional Miscellaneous
Client-Server (DNS, HTTP, REST, LDAP), RPCs (Thrift), Distributed File Systems(NFS,HDFS), Analytics Platforms (Hadoop,Spark), Computations (PageRank), NoSQL Storage (Cassandra,HBase), Distributed Databases (Hive, Impala), Computer Vision (OpenCV, Tesseract-OCR)

WORK EXPERIENCES

HBO / WarnerMedia, Senior Staff Software Engineer (Full-time) Seattle, Washington Jan 2019 - Present
- HBO Max build, test, deploy, and release (CI) across all platforms reaching millions of subscribers globally at play.hbomax.com.

IMDb, Software Development Engineer (Full-time) Seattle, Washington Nov 2016 - Dec 2018
- Developed music player react component with Java Spring backend for up to 4 million movie soundtracks available globally at IMDb.
- Maintained & managed all services/server fleets that vend nearly 5 million units of movie/television data to IMDb per day.
- Designed & implemented persistent user voting on all images and videos on IMDb's iOS, Android and web platforms.
- Streamlined a 5 person team's SDLC practices, including design, coding architecture, testing, code reviews, deployments.

Amazon Web Services, Software Development Engineer (Co-op) Palo Alto, California Aug 2015 - Dec 2015
- Created a client-side solution to maintain identical copies of DynamoDB tables across different AWS data center regions, in real time.
- Used AngularJS & GWT alongside AWS in order to eventually consist data between tables across regions in single digit ms latency.
- Designed specialized Spring Beans to regionalize AWS clients and asynchronous RPC model proxies from client side to server.
- Led this MVC architecture project to production release using Tomcat and is available worldwide at aws.amazon.com

Smart Technologies, Firmware Engineer (Co-op) Calgary, Alberta May 2014 - Apr 2015
- Developed real-time pattern detection algorithm using OpenCV to detect cosmetic and performance defects on retro reflective tape.
- Designed prototype for Linux embedded system on ARM based FPGA SoC to work with a Bluetooth and Wi-Fi module .
- Used Xilinx Design Suite to map pins and generate bitstream to physically connect hardware to the FPGA's fabric.
- Modifications to U-boot, First Stage Bootloader, Linux Kernel, and Device Tree led to the completion of this prototype.
- Reverse Engineered an outsourced firmware upgrade of SMART boards using I²C Analyzer and oscilloscope.
- Developed I²C driver to send/receive firmware upgrade of RAW bin file in 256 byte chunks with checkbit.

ON Semiconductor, Firmware Developer (Co-op) Waterloo, Ontario Sep 2013 - Dec 2013
- Worked on live signal debugging for RS232 and I²C transmission to high speed hearing aid programmers.
- Designed I²C & RS232 drivers to allow support of three more high speed hearing aid programmers, resulting in over 1000 employees and suppliers being able to develop DSP tools on hearing aid devices more conveniently.

BlackBerry, Software Engineer (Co-op) Waterloo, Ontario Jan 2013 - Apr 2013

RELEVANT PROJECTS

FollowCam Drone -Built human tracking UAV using image processing, control theory, I²C (Testing Video, Github)
GitHub Side Projects -Dota 2 Twitch Image Processing, Face and Eye Detection, Dota 2 Drafting Simulator (Android)
HackTheNorth(hackathon) -Participated in hackthenorth.com. Design & code of intelligent preference magazine