Kapil Kale

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Education

Virginia Tech, Blacksburg, VA   GPA: 3.79/4
Master of Science, Computer Engineering   Aug. 2016 – May. 2018
Coursework: Data & Algorithm Analysis, Software Engineering, Object Oriented Software Design, Network Architecture & Protocols
(Big) Database Management Systems, Machine Learning, Statistics in Research, Testing of Digital Systems

National Institute of Technology, Nagpur, India   GPA: 8.09/10
Bachelor of Technology, Electronics and Communication Engineering   Aug. 2010 – May. 2014

Technical Skills

- **Proficient**: Python, Java, C++, C, SQL, Git
- **Tools**: Amazon AWS (EC2, S3, EMR), Apache Hadoop HBase Cassandra, MongoDB, pthread, Django, Scikit-learn, GNU Debugger
- **Familiar**: Go, Software Development Life Cycle, Agile/Scrum, JIRA, Black White Box Testing, Shell Scripting, REST API, HTML, CSS

Professional Experience

Analog Devices Inc., *Applications Intern (Software), Greensboro, NC*   May. 2017 – Aug. 2017

- **Project 1** - Developed reusable scripts in **Python** to automate the test benches for various test measurements which resulted in getting data quickly for further analysis.
- Visualized the data obtained after running these scripts to find the buggy locations or areas of improvement in the product.
- Created reusable Object Oriented Python Wrapper with MATLAB for test automation to be **used by multiple engineering teams**.
- **Project 2** - Fixed various bugs and added new features in the internal tools of Analog Devices, Inc. to integrate the existing revision of the product. (**Development using C, Python, JIRA**)
- Updated the Device Drivers and added new modules to the current Revision C of the product (Direct Radio Frequency DRF v2)

Black & Veatch, *Graduate Engineer (RF), Pune, India*   Aug. 2014 – Jul. 2016

- Collaborated with multiple engineering teams in the United States (NY/NJ/CO) for the completion of various AT&T projects.
- Created **GUI in Python** using **Tkinter** for the automation of antenna design process which reduced the time to create design document from average 45 minutes to 5 minutes. (88% of faster results).
- Developed Python scripts to automate the creation of CSV files to update AT&T database to eliminate manual errors.
- Successfully **managed a small team** for 6 months from India while directly reporting to the multiple project managers in the US.

Academic Experience

Virginia Tech, *Graduate Research Assistant, Blacksburg, VA*   Jan. 2017 – Dec.2017

- Software development (Team of 2) for an NSF funded project worth **$750000** of 3.5 GHz spectrum sharing between government and commercial users at the Center for Embedded Systems for Critical Applications.
- Solely implemented optimizations and **multithreaded** environment for the faster calculation of spectrum access (30% faster results) generated by the commercial users. (**Linux Development using C, Python, pthreads, Git**)

Virginia Tech, *Graduate Teaching Assistant, Blacksburg, VA*   Aug. 2017 – May. 2018

- Helped students in the programming projects **(Python, Java, C++)**, homework and daily queries for graduate level CS course '**Network and Protocols**' for fall 2017 and spring 2018 semesters.

Academic Projects

- **(Big) Database Management Systems -** *Future Crime Prediction using a Time Series Model* **(Python, Machine Learning)**
Analyzed the crime data from the city of Philadelphia to make an accurate prediction of crime occurrence given a place and time using Multi-Task Time Series Models.
- **Software Engineering** - *Software Engineering Analysis for Conversion of a Monolithic Applications into Microservices.* **(Research)**
Conducted thorough research, literature study and survey regarding the advantages, disadvantages of migration of Monolithic Applications into **Microservices** (Service Oriented Architecture).
- **(Big) Database Management Systems -** *Computing n-Gram Statistics in MapReduce* **(Python, Java, Hadoop, AWS)**
Used MapReduce on AWS platform to count the number of distinct 2-grams from the set of 4-grams in a given text corpus.
- **Object Oriented Software Design -** *Power Restoration System Design* **(C++)**
Initially designed the system by creating UML diagrams and considering various use cases. The Code was then written in C++ using Object Oriented principles.
- **Testing of Digital Systems -** *Test Set Compaction and Fault Coverage Improvisation* **(C++)**
The project aimed at removal of redundant vectors from test set which do not improve the fault coverage to get high-quality vectors. Fault coverage was then improved using this high-quality vectors.
- **Network Architecture & Protocols -** *Client-Server Application* **(Python, Java, TCP/IP, HTTP)**
Built the application using socket programming for HTTP request authentication. Also added the file transfer functionality in a multithreaded environment.

Honors and Awards

- **100% tuition fee waiver for Fall 2017** semester and **75% tuition fee waiver for Spring 2017, 2018** semesters by ECE department.