PUNEET PAUL

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OBJECTIVE

To obtain a challenging position as a software developer which utilizes my technical and analytical skills

SUMMARY

An experienced Software engineer with ten years of experience in delivering new products which improve user and equipment productivity. Proficient with various programming languages, concepts and technologies while providing excellent technical and communication skills.

COMPUTER SKILLS

Languages: Ruby, Python, Perl, C, SQL, C++, C#, Java, Erlang, Javascript
Web frameworks: Ruby on Rails, CherryPy, Jquery, Apache
Databases: Mysql, Oracle
Patent: Automatic selection of wafers.

EXPERIENCE

Knowledge Decision Securities San Jose, CA January 2011 – Present

Contractor

- Equity Derivative valuation framework: Risk Analysis system that simulates millions of economic paths by incorporating key variables, to capture true risk, and valuations associated with ETF equity derivatives
    - Developed a real time data feed which using Yahoo finance. This data feed got real time equity prices and Option Chain data. This script loaded 10 million records on a daily basis. Work included optimizing performance of Mysql database. Code was written in python.
    - Developed an implied volatility calculator, using Black-Scholes functional form, and uses newton raphson routine to solve for implied volatilities. Code was written in python and Java.
- Option Adjusted Spread: Montecarlo
    - Worked on scaling an existing Monte carlo Simulation Option-Adjusted-Spread. Successfully improved performance and resource utilization by 70%. Modified the code to integrate with resource manager called SLURM.
    - Developed a http based data server that stores monthly prepayment data for mortgage backed securities. The data is used as one of the inputs to the OAS simulator.

Intel Corporation Hillsboro, OR September 2000 – December 2010

Senior CAD Engineer, Portland Technology Development November 2006-December 2010

- Administered Mysql database that was used to store settings used to run EDA applications.
- Developed QA strategy for a distributed EDA tool, which effectively reduced qual time from 9 months to 3 months. Project involved test automation using ruby.

- Rules engine: Application that parses output from EDA tools and triggers next steps, based on the output. The triggers could be user defined using a rules specification mechanism. Used Mysql database to store data.
- Tooldriver development; wrote Linux scripts that are used to launch and monitor EDA applications during execution.
- EDA application optimization: Was part of a team that optimized performance of EDA tool used for Optical proximity correction. The project involved running experiments with the tool, collecting and analyzing data from the experiments and making data driven decisions to make changes to the tool. Ran about 5.000 experiments as part of this project. Ruby scripts were used to collect the data.
- Developed and wrote tool drivers that were used to launch and monitor EDA tools.
- Launched Tooldrivers in a Linux environment and managed from a Windows UI.
- Designed and implemented Windows to Unix communication.
- Managed a high performance Linux cluster that was used for running EDA applications.

Senior Software Engineer, Portland Technology Development April 2004–November 2006

- **Project Lead, Yield Automation System**: Led a project for the qualification and implementation of the next generation semiconductor Yield management system. The Mission critical system consisted of a set of data processing applications, data loaders, database (> 1 billion records), and 2 different GUI's for data analysis. Individual role included:
    - Project management
    - Regular interaction with external vendors
    - Mentored and trained new project members
    - Regular reports to management
    - Featured prioritization
    - Defined qualification strategy for this product
    - Defined overall release strategy after consulting users
    - Created a curriculum for user training
    - Shipped software system to 4 different Intel factories with approximately 4000 users.
- **Technical Lead:** Yield Analysis domain operational health team.
    - Led a 5 member team that was responsible for maintaining high availability and reliability of a mission critical system;
        - System contained 150 concurrent UI sessions.
        - Up to 10 GB of concurrent data loading from 150 different equipment 24 x 7.
    - Identified system health indicators with appropriate red lines.
    - Identified and implemented product enhancements to improve operation health.
    - Regularly met with operational teams from other Intel factories to exchange know-how.

- Team successfully reduced number of support calls by 80%.

- **Intel Classification engine (ICE)**
  - 32 bit windows GUI client that displayed images of the surface of a silicon wafer to the user. Involved the development of a GUI and a server. The images were stored in a database on the server.
  - Role included:
    - Product specification
    - Product architecture
    - Server API design: Designed and implemented API for data access. This API was used by the UI developers
  - This application improved factory throughput of defect metrology operations by 40% and reduced SEM usage by 60%.
  - Successfully shipped to 12 Intel factories. It is used to view images from 8000 wafers per week at each factory.
- **Waferpicker:**
  - Windows application that analyzed data collected during a silicon wafer inspection to use and decide if the wafer needs to be sent to a SEM for image capture. Decisions were made based on a set of user defined rules.
  - Designed a proprietary scripting language for rule specification. The scripting language consists of about 50 key words. Developed an interpreter for the script language.
  - Implemented Rules Engine by grouping data with bit vectors, based on the rules.
  - Used a buffer cache mechanism to parse text data. Data sized in ranges from 1 KB to 50 MB, memory usage was limited to a maximum of 2 MB.
  - Role included:
    - Conceptualization
    - Product specification
    - Product design and development
    - User training
  - Application was successfully shipped to 7 Intel factories. Each install was used to process data from greater than 10000 wafer inspections per week.

Factory Automation Engineer, Portland Technology Development September 2000-April 2004

- **Customer point of contact:** Proactively interacted with customers to understand their business needs. Led identification of a number of small projects that helped improve user experience.
  - Tool mapper: A batch file that that automatically maps equipment to external drives during startup
  - Defect monitor: Monitored health equipment. A perl script that summarizes equipment data and loads it to a statistical process control chart.
  - Forward scripts: A shell script that ensures that data from the equipment arrives in the correct format so as to ensure proper loading to the database.
- Implemented a scheduler for data processing. The system consisted of a set of applications which deployed across a cluster of 3 Windows servers. The scheduler

would decide which set of applications to process the data with, using a set of XML configurations. The scheduler was implemented using COM+. Roles included code development and coordination of testing activities.

EDUCATION

Kansas State University, Manhattan, KS

Masters in Computer Sciences

- Masters thesis: Framework for distributed collaborative applications, written in Java and implemented a coordination service for orderly interaction and configurable channels for communication Certificate of
  GPA: 3.75

Manipal Institute of Technology, India

Bachelor of Technology in Computer Science, Jan 1997