Srinivas Vishnu Vardhan Pasupula

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Objective

A highly motivated professional, passionate to learn new tools and technologies seeking a career in software development in an organization that will enable me to contribute to the team and company's growth as well as encourage professional and personal growth.

Summary

- **6 years** of experience as a C/C++ software developer and a **Masters degree** in Embedded Systems from Eindhoven University of Technology, The Netherlands.
- Developing SiL software in ZF Middleware project, following **ASPICE framework**.
- Followed **agile method** of development throughout my career.
- Experienced in collaborating with multi-national team mates to develop software projects.
- I have experience working on all stages in **V-model Software Development Life Cycle**.
- Received **Rockstar award** at ZF India Technology Center for the work done on C/C++ Package Management and eclipse plugin development.
- With passion to learn new technologies, I learnt various **front-end technologies** such as React, HTML, CSS and JavaScript and also dabbled with AI/Machine Learning.
- **IBM certified**[1] DB2 SQL developer.
- **Passionate** to learn more and learn fast.

Technical Skills

Advanced: C++, Python, C, Adobe ColdFusion, JSP, Adobe Flex, jQuery, JavaEE, SQL (IBM DB2, MySQL), XQuery.

Intermediate: Java, HTML, JavaScript, CSS, Docker, HTML5, FreeMarker, OpenCL, Spring MVC, Hibernate, Oracle SQL, LaTeX and Shell scripting.

Basic: CUDA C, MATLAB, Silicon Hive, TensorFlow by Google and scikit-learn for Machine Learning, ROS.

Experience

ZF Technology Center, India **Sep 2018 – Present**
Tech lead *Hyderabad, India*

- **Description**: Design and develop infrastructure and integrate, implement and test Simulation in Loop systems.
- **Projects**:

1. **Simulation in Loop Systems**
   * We are developing SiL software applications by following **ASPICE** framework.
   * Gathered requirements from client and wrote corresponding requirements for SiL usecase.
   * Using **C/C++**, I have implemented Simulation counter parts for the hardware components (ex. camera).
   * Using **Socket Communication protocols** (TCP and UDP), implemented applications using **C/C++** that can send and receive large amounts of data (image, audio, sensor signals).
   * Implemented a way to load and unload sensor and actuator modules during runtime in an application developed using **C/C++**. This led to reduction of time to build and test the modules on SiL infrastructure.
   * Implemented multiple tools using **Python** to improve the products of our BU.
2. **Setup C/C++ Package Management and CI/CD**
   * Implemented **CI/CD** pipelines in both Jenkins and Azure environments.
   * Developed **Jenkins Shared Libraries** that will be used in CI/CD pipelines to reuse code and reduce code

duplication.
  * Implemented **code generators in python** to convert files from other formats to C++ classes (for ex. YAML files, Jinja templates)
  * Encouraged the use of C/C++ package management tool called Conan(https://conan.io) in our organization to make application development for different OSs and architectures simpler and error free.
  * **Trained** and continue to support colleagues from various other teams in python development and C/C++ package management using Conan and CMake.
  * Developed an **eclipse plugin** for Conan and also an automating script that makes it easier for anyone to use Conan without actually needing to learn Conan.
- **Technical skills**: C, C++, Python, Shell scripting languages, Docker, CarMaker, Java, ROS.
- **Tools**: Using Docker with linux base image, developed infrastructure to build and integrate various sensor models needed to simulate a vehicle, Eclipse, VSCode.

ASML **Nov 2016 – August 2018**
Embedded Software Design Engineer *Veldhoven, The Netherlands.*

- **Description**: Design and develop software for Immersion hood part of the Lithographic systems of ASML. Immersion hood uses water to increase the Numerical Aperture to manufacture smaller size chips.
- **Projects**:

1. **Implement libraries for Immersion Hood**
   * Gathered client requirements for the Immersion Hood.
   * Developed embedded software libraries using **C/C++**.
   * Learnt about different **software development standards** followed in open source code and ASML's own standards and conformed my development to these standards.
   * Using python and GTest framework, implemented unit tests and improved test software coverage for legacy code and also any new development done.

- **Technical skills**: C, C++, Python, Shell scripting.
- **Tools**: WindRiver workbench on a Linux operating system.

Océ Technologies (A Canon Company) **Jan 2016 – Aug 2016**
Graduate Researcher *Venlo, The Netherlands.*

- **Description**: The printers developed by Océ are large scale printers and are productive when printing large number of sheets such as books, pamphlets, etc. In the Research and Development part of Océ, work is done to improve the printer quality while reducing per print cost of a print job.
- **Projects**:

1. **Implement and Improve Scheduling Algorithm of a Production Printer**
   * Researched available literature on schedulers and experimented with new ideas to improve the scheduling algorithm's performance.
   * I have modeled, implemented these improvements and analyzed which model improves performance of the scheduler the most using Pareto graphs.
   - Two parameters were considered to evaluate the models:
     · Execution time, the lower the better.
     · Quality of schedules, the higher the better.
   * Scheduler's execution time depends on how many sheets need to be scheduled. Compared to the scheduler that was already being used in production, my implementation produced schedules almost 12x faster.
   * I have experimented using OpenMP and CUDA to improve the performance.
   * I have modified the scheduler's algorithm to use it as an "on-line scheduler" with quality of schedules changing by only $\pm 10\%$.
   * My work and research for this thesis has contributed to my mentor's Ph.D and also a patent has been filed for this scheduler algorithm at the European Patent Office.

- **Technical skills**: C, C++, Python, Shell scripting.
- **Tools**: Eclipse for C, C++, spyder for Python on a Linux operating system.

Net.Orange (acquired by AllScripts and later closed in 2017) **Jun 2012 – Jun 2014**
Software Engineer *Hyderabad, India.*

- **Description**: Net.Orange was a healthcare technology company which developed, managed and supported various clinics and healthcare organizations using a web operating system called 'clinical Operating System'.
- **Responsibilities**:
  - I have developed back-end (services & database) using JavaEE, MySQL after communicating with all the stakeholders and developed front-end using Adobe ColdFusion.
- **Technical skills**: Adobe ColdFusion, HTML, CSS, JavaScript and JQuery, JavaEE, Xmaps and XQuery.
- **Tools**: Eclipse for Java, MySQL for SQL development, Adobe ColdFusion IDE for ColdFusion, Linux OS.

Education

Master's degree in Embedded Systems **Aug 2014 – Aug 2016**
Eindhoven University of Technology (TU/e) *Eindhoven*

GPA: 7.7

Relevant courses: Embedded Computer Architecture, Real-Time systems, Quantitative Evaluation of Embedded Systems, Embedded Visual Control, Networked Embedded Systems, Video Processing, etc. **Master Thesis**: on *Scheduling and Optimization of Heuristic Production Printer Scheduler.*[3]

Bachelor's degree in Electronics & Communication Engineering **Jun 2008 – Jun 2012**
Keshav Memorial Institute of Technology (KMIT), affiliated to JNTU Hyderabad *Hyderabad*

Aggregate: 79%

Relevant courses: C Programming & Data Structures, Control Systems, Computer Organization, Microprocessors & Interfacing, Computer Networks, Operating Systems, etc.

Online courses/certifications

Machine Learning[2] **Oct 2017**
Stanford University on Coursera

Master Thesis

Title: *Scheduling and Optimization of Heuristic Production Printer Scheduler.*[3]

Supervisors: Associate Professor dr. ir. Marc Geilen & dr. Umar Waqas.
Eindhoven University of Technology (TU/e), Eindhoven, The Netherlands.

Company: Océ Technologies (A Canon Company), Venlo, The Netherlands.

Description: The goal of project is to optimize and modify a scheduler to improve its performance, so that it can be used in production printers as an "on-line" scheduler. Detailed achievements include,

- Researched, experimented, modeled, implemented improvements for the scheduling algorithm. Analyzed which model improves performance of the scheduler the most.
- Two parameters were considered to evaluate the models:
  - Execution time, the lower the better.
  - Quality of schedules, the higher the better.
- Scheduler's execution time depends on how many sheets need to be scheduled. Speedups from 2 to 13 have been observed without any loss in quality.
- Modified the scheduler's algorithm to use it as an "on-line scheduler", with quality of some schedules varying $\pm 10\%$ on an average.
- Using the data from my research, a patent has been filed at the European Patent Office.

Languages

Kannada: Mother-tongue

Telugu, Hindi, English: Proficient *Fluent in speaking, writing and reading.*

French(currently self-learning): Basic *Basic words and phrases only.*

References

[1] IBM certified DB2 SQL developer.

[2] Machine Learning by Stanford University on Coursera. Certificate earned on October 30, 2017. (`https://www.coursera.org/account/accomplishments/certificate/T935E2CEXFHT`)

[3] *Scheduling and Optimization of Heuristic Production Printer Scheduler*. Eindhoven University of Technology, Eindhoven, The Netherlands, 2016. (`https://research.tue.nl/files/46946061/855764-1.pdf`)

PS: Please visit psvvardhan.github.io for more detailed information about my career and the list of projects that I have worked on.