Alok Nigam

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Experienced software engineer with a passion for developing C++ programs that expedite the efficiency and effectiveness of the organization. Well-versed in EDA tool development, Fonts processing and text rendering. Good experience in developing software in a Linux environment with large codebases.

Academics:

- B. Tech (Electrical and Electronics Engineering) with an aggregate of 70.51% in 2013-2017 from Dr A.P.J. Abdul Kalam Technical University, U.P.
- 12th with 78% from St. Mary's Senior Secondary School, Banda, U.P. (CBSE) in 2011 - 2012.
- 10th with 9.2 CGPA from St. Mary's Senior Secondary School, Banda, U.P. (CBSE) in 2009 - 2010.

Technical Skills

Domain Expertise	Conceptual Knowledge	Tools Used
C and C++	Object-Oriented Design	SpyGlass, Xilinx ISE
Data Structures and Algorithms	Digital Logic Design	Virtuoso
STL	STA	Make, GDB, Valgrind
Shell Scripting, TCL, Python, Perl	Operating system concepts	Git and Perforce
Design Patterns	Compiler Design	Flex and Bison
Verilog	Computer Architecture	LabVIEW
		Matlab and Simulink

Work Experience

Monotype: October 2018 - Present
Role: Software Engineer, Display Imaging
Product Worked:
WTLE & WTShaper: Layout & shaping engine
iType: Text rendering Engine
FlipFont: System-level font switch in Android OS.

Activities:
- New features
- Bug fixes
- Automation
- Support CI maintenance

Synopsys: June 2017 - October 2018
Role: Intern, SpyGlass R&D
Product Worked:
SpyGlass: Early Design Analysis Tool

Activities
- TCL shell command development.
- Bug fixes
- Source code optimization.
- Automation
- Regression fixes
- Cross-team development support

Professional Training - PINE Training Academy

ASIC Design and Custom Layout course
Duration: August 2016 - May 2017
This course is dedicated to VLSI specific to ASIC flow. Modules included in the course are -

- Digital Design
- Verilog modelling
- Linux
- Shell Scripting
- Schematic Design
- Custom Layout
- TCL
- Perl

Projects

Cygnus - Source Code Browser

- Open Source C++ based project
- Inspired but not forked from CSCOPE
- Advanced query features
- Designed to adapt to multiple languages
- Uses Flex and Bison
- CI setups for various testing
- Auto-Doc generation using Doxygen
- Github: https://github.com/aloknigam247/cygnus

Makefile Generator

- Open Source Python-based project.
- Find dependencies for source file recursively.
- Generate makefile with a header as config.
- Designed for unit tests, but can be used for source code too.
- Github: https://tinyurl.com/y9rt4g92

C++ Style Check

- Open Source project Python-based project.
- Runs a style check on C++ source code.
- Custom implementation for Cygnus.
- Can validate:
  License, class names, function names, brace styles and so on.
- Github: https://tinyurl.com/y88ezgwx

TrackIt

- Embedded C + Arduino Nano + BLE + PCB + Android.
- A small device that acts as a slave.
- Sounds alarmed as soon as the slave goes out of range.
- The android device works as a Master that sounds alerts user when the slave is lost.
- Double-sided SMD PCB (3cm x 2 cm)

Competitions

e-Yantra Robotics Competition - 2014

- Embedded C + AVR ATMEGA2560 + FireBird V
- Team size: 4
- Design and develop sorting route for the robot.
- Get configuration from the starting blocks.
- The route should be the shortest and fastest possible.
- https://www.youtube.com/watch?v=o6HxSwYvmM8

Robocon - 2016

- Embedded C + Arduino UNO + Motors (BLDC) + Pneumatics + Other Mechanical and Electrical stuffs
- Team size: 8
- Set of multiple complex tasks, visit the link for more info.
- https://www.youtube.com/watch?v=pZNNk8EN8DU

Maze Solver - 2016

- Embedded C + Arduino UNO
- Team size: 4
- Traverse the complete path in the first run.
- Find the shortest path.
- Traverse the shortest path in the second run.
- Uses path cancellation on return algorithm for efficient memory usage.

Achievements

- CLAD (Certified LabVIEW Associate Developer) Certified by National Instruments on Oct 2015.
- AIR-5 in e-Yantra Robotics Competition IIT Bombay on 27 March 2015.
- Regional (North India) best in Robocon 2016.
- Interim Student Chair at ABES IEEE PES Student Chapter.
- GATE (CS, 2020): Qualified (Gate Score 554).

Interests

- Robotics
- Automation
- Music, Movies and Series
- Reading CS and Electronics stuff

DECLARATION

I hereby declare that all the information furnished herein are true and correct to the best of my knowledge and belief.

Date: May 5, 2020

Place: Noida (U.P.) Alok Nigam