Sunanda Roy

> Currently seeking positions in software development or in research. Previous experience in software development and testing in area of modem power optimization, firmware development and automotive industry.

EXPERIENCE

Simplifying Learning, Kolkata, WB, IN — *Design and Development Engineer*

OCTOBER 2019 – PRESENT

> ➤ Develop prototype software for various requirements.

GFK Education Pvt. Ltd., Kolkata, WB, IN — *Student*

MAY 2019 – JULY 2019

> ➤ Created data dictionary objects and prepared detailed reports on standard and custom tables based on requirements.
> ➤ Working knowledge of R/3 system, system landscape, work process, LUW, function modules, subroutines, include programs.
> ➤ Implemented various internal table operations for requirements on standard tables using classical, interactive and ALV reports.

Intel Corporation, Hillsboro, OR, US — *Firmware Engineer*

FEBRUARY 2016 – JULY 2018

> ➤ Designed and implemented firmware targeted at Server management and Power and thermal management for Internet Portal data centers.
> ➤ Collaborated to explore new architecture, establish viable and reusable firmware designs.
> ➤ Developed and tested software targeted at manipulating memory devices from an OS and UEFI perspective.

Qualcomm Technologies Inc., San Diego, CA, US — *Engineer*

JULY 2012 - NOVEMBER 2015

> ➤ Triaged customer stability issues and provided support for critical customer issues on need basis.
> ➤ Debugged crashes and complex issues with JTAG Trace32 on both live and simulator platforms.
> ➤ Developed tools in Trace32 for post processing the RAM dumps.
> ➤ Developed script to automate post processing of DSP dumps along with triaging of DSP issues.

Social Escapade LLC, Los Angeles, CA, US — *Web Designer*

MARCH 2012 - JULY 2012

> ➤ Conceptualized, designed, and refined the user interface/user experience.
> ➤ Developed the front end of a website based on initial requirements from

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PROFESSIONAL INTERESTS

> ➤ Software development
> ➤ Firmware development
> ➤ Debugging and testing
> ➤ Signal processing
> ➤ Image processing
> ➤ Robotics

TECHNICAL SKILLS

Programming Languages

> ➤ C
> ➤ C++
> ➤ Python
> ➤ PHP
> ➤ MySQL
> ➤ SAP ABAP/4
> ➤ Bash
> ➤ Perl
> ➤ HTML/CSS
> ➤ XML
> ➤ JavaScript
> ➤ Ajax
> ➤ JQuery

Application Software

> ➤ Arduino
> ➤ Linux
> ➤ VMWare
> ➤ Eclipse Debugger
> ➤ Trace32 Debugger

customer.
- ➢ Participated in design improvement discussions and implemented review feedback into front end software.

Robert Bosch Engineering and Business Solutions, Coimbatore, Tamil Nadu, India — *Software Engineer*

JUNE 2008 - JULY 2010

- ➢ Performed software development, debugging and testing for reporting errors in sensors and controlling the fuel supply of vehicles.
- ➢ Implemented and validated complex functionalities for diesel passenger automobiles on emulator platform.
- ➢ Implemented cross platform software migration for diesel and gasoline passenger automobiles.
- ➢ Supported critical feature-specific issues as needed by customers of fuel supply software for diesel passenger automobiles.

EDUCATION

University of Southern California, Los Angeles, CA
MS in Electrical Engineering, Applied GPA 3.6/4

AUGUST 2010 - MAY 2012

Digital Signal Processing, Digital Image Processing, Analysis of Algorithms, Web Technologies, Mathematical Pattern Recognition, Robotics, Sensing and Planning in Robotics, Probability Theory, Applied Linear Algebra

Avinashilingam University, Coimbatore, India
BE in Electrical and Electronics Engineering, CGPA 8.3/10

AUGUST 2004 - MAY 2008

Object Oriented Programming, Database Management Systems, Operating Systems, Computer Architecture, Embedded Systems, VLSI Design, Microprocessor and Microcontrollers, Digital System Design and Testing

PROJECTS

GFK EDUCATION PVT. LTD.   *Kolkata, WB*

Material Planning Report
- ➢ Created material planning report which displays material usage per storage location.
- ➢ Calculated transit stock value from total valuated stock and unrestricted use stock.
- ➢ Used functional knowledge of credit and debit for specific movement types to calculate final manufacturing quantity.
- ➢ Used functional knowledge to calculate order in hand from total

- ➢ Trace32 Simulator
- ➢ SAP Netweaver
- ➢ MATLAB
- ➢ Simulink
- ➢ Perforce
- ➢ Git
- ➢ Clearcase
- ➢ Clearquest
- ➢ Rational Team Concert

AWARDS

Qualcomm Technologies Inc.: Recognized for tremendous contribution during platform bringup within tight deadlines and limited hardware resources.
Robert Bosch Engineering and Business Solutions: Recognized for tremendous contribution during software migration across platforms within tight deadlines and changing requirements.
Avinashilingam University: Obtained first position in programming contest using C language.

WORK AUTHORIZATION

Require Visa sponsor (outside India)

purchase order quantity.
➢ Used functional knowledge to calculate required quantity from quantity in unit of entry for specific movement types.

Citizen (India)

QUALCOMM TECHNOLOGIES INC. *San Diego, CA*

Qualcomm Debug Subsystem Events
➢ Worked on enabling Qualcomm SW debug events for profiling modem subsystem events for on-chip debugging.
➢ This framework allows modem s/w trace events to be profiled alongside other processor s/w events at real-time basis on a target device.

Trace 32 script
➢ Worked on a script to post-process RAM dumps to display actual state of modem subsystem variables at any given time.
➢ This tool has been useful in debugging crash dumps by providing modem s/w resource values at the instance of a crash.

Python script and C code
➢ Worked on a script and its corresponding source code to profile modem subsystem overall timeline and its breakdown into individual resource commit timelines. This tool has been useful in debugging timeline variations due to changes in modem s/w.
➢ Worked on a script and its corresponding source code to automate the process of updating a specific source file based on software changes across multiple files during software release process. Additional s/w tools used in this project include Perforce and ElectricCommander.

Perl script
➢ Worked on multiple scripts to automate various test procedures to debug modem subsystem crashes.
➢ Developed a prototype feature of automating the complete process of compiling latest engineering builds for any target device. This s/w is independent of processor and hardware configuration and can be extended to compile multiple engineering builds for a single target device.

UNIVERSITY OF SOUTHERN CALIFORNIA *Los Angeles, CA*

Digital Image Processing
➢ Image manipulation, Image enhancement, Noise removal, Edge detection, Morphological processing, Digital halftoning, Geometric modification, Texture analysis and segmentation using Laws filters, Optical character recognition
➢ Super-resolution of a low-resolution image using a combined framework of single-image and multi-image super-resolution algorithms

Web based information system for a company
- ➢ Create a database of employees and access any of their survey reports
- ➢ Add, remove or update an existing user or product's details
- ➢ Search for products and view sales data
- ➢ Implemented session timeout and secure login criteria
- ➢ Created a shopping cart using the CodeIgniter shopping cart class
- ➢ Unique feature: Implementation of AJAX to display product images leading to compact look of the product details page

Pattern Recognition
- ➢ Pattern Classification of Modified Bibs digits dataset using both distribution-free and statistical classifiers and evaluation of the best performing classifier with a result of 34% error
- ➢ Classifiers used: Support Vector Classifier, Nearest Mean Square Classifier, Fisher Discriminant, K-Nearest Neighbors, Parzen Window

- ➢ Pattern Classification of PIMA Diabetes dataset using different types of Support Vector Machine (SVM) algorithms to obtain the most efficient classifier with an efficiency of 80.13%
- ➢ Algorithms used: Ordinary SVM, Active SVM, Linear SVM, Proximal SVM

Sensing and Planning in Robotics
- ➢ Implemented the core probability concepts of Bayes Estimation and Markov Chains in predicting the final vehicle velocity in a simplified model of an Adaptive Cruise Control system