Akhil Guliani

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OBJECTIVE

Research and Development in Computer Systems. Interested in System Design in general. Areas of interest include Virtualization and Containers, Data-centre Design and Operation, Wearable Sensor Systems Design.

EDUCATION

University of Wisconsin-Madison, Madison, Wisconsin, USA

- Doctor of Philosophy (Ph.D.) in Computer Science   Aug 2016 – present
  - Research areas: Computer Systems.

Northwestern University, Evanston, Illinois, USA

- Master of Science (M.S.) in Computer Engineering   Sep 2014 – Mar 2016
  - Cumulative GPA: 3.92 / 4.00
  - Thesis: Optimizing Framework For Minimizing Thermal Variation Across System Components Using Machine Learning Methods
  - Adviser: Professor Seda Ogrenci Memik
  - Research areas: Computer Systems, Memory Management, Embedded Systems, Architecture, Machine Learning.

Netaji Subhas Institue of Technology, University of Delhi, New Delhi, India

- Bachelor of Engineering (B.E.) in Instrumentation & Control   Aug 2008 – Jun 2012
  - Graduated in Class I with distinction.
  - Cumulative GPA: 76.6 / 100

EMPLOYMENT EXPERIENCE

Northwestern University , Evanston, IL, USA

- Research Assistant, Department of Preventive Medicine   Jan 2016 – Mar 2016
  - Project: Wearable Eating Detection System

- Teaching Assistant, EECS Department   Sep 2015 – Dec 2015
  - Course: EECS 339 Introduction to Database Systems, Fall 2015.

- Research Assistant, EECS Department   Jul 2015 – Sep 2015
  - Worked on architectural simulations using GEM5. Analysis of thermal and performance impact of different architectural configurations on applications under Prof. Seda Ogrenci Memik.

GAIL (India) Ltd. , New Delhi, India

- Senior Engineer (Instrumentation)   Sep 2012 – Jul 2014
  - Project Execution engineer in the GAIL Petro-Chemicals-II Expansion Project in Pata, UP, India. Responsible for execution of jobs related to Process Instrumentation System used, including Procurement, Inspection, Erection, Pre-commissioning and commissioning activities.

Air India Ltd. , New Delhi, India

- Industrial Trainee   Dec 2011 – Jan 2012
  - Industrial Internship at Air India's Northern Engineering Office at IGI Airport, New Delhi.

Indian Institute of Technology Delhi , New Delhi, India

- Student Intern under Global Internship Program in Engg. Design and Innovation (GIPEDI) May 2011 – Jul 2011
  - Project: Study and Implementation of Real Time Operating System for 8-Bit Microcontrollers. Focus on TinyAVR microcontroller. Femto OS was selected. Reference board was built and an implementation for the I2C driver was developed.

- Student Intern under GIPEDI   Dec 2010 – Jan 2011
  - Tasked with developing a programmer for the SoC TI CC2530. Developed the reference board and firmware for the programmer. Patched the provided Linux OS application adding the ability to recognize and program the SoC.

- Student Intern   May 2010 – Jul 2010
  - Advisor Prof. I P Singh
  - Focus in embedded systems, worked with intel 8085 (uP) and 8051 (uC). Studied the 8051 Architecture and developed a reference development printed circuit board using Atmel's AT89C51 chip.

PROJECTS	**Implementing Device File Virtualization for Palacios VMM**

- Developed as part of a team a proof of concept for device file virtualization for Palacios Virtual Machine Monitor. The concept allows a Linux guest to access the device files of the Linux host.

BLE Smartwatch Project

- Developed as part of a team a simple BLE based smartwatch platform for use in Empathetic Systems Lab at Northwestern. I was responsible for developing the Arduino firmware for the collecting sensor data and transmitting it to an android phone over Bluetooth Low Energy and developing the android application to receive and relay it to an external server.

Determining the Impact of Hashtags used in Marketing Campaigns on Social Media Platforms Using Sentiment Analysis

- A Data analytics project to study the effect of user sentiments on text surrounding hashtags in social media posts to gauge the public response to a marketing campaign associated with the hashtag.

Study of Loop Perforation for use in GPU's

- The goal of this project was to find a way to implement approximate computing technique of loop perforation on GPU Image processing algorithms and study it so as to ascertain its usability for more complex tasks on the basis of time vs quality on output

Designing Wireless File transfer mechanism for Remote Patient monitoring system

- Developed as part of a team a mechanism to capture and transmit asynchronously and reliably ordered sets of data being produced by a remote sensor over WLAN to be used for a remote patient monitoring system.

AWARDS

- Merit Scholarship from University of Delhi   2008 – 2012
  40% Tuition scholarship for attaining an annual GPA of Class I with distinction (Grade ≥ 75).
- 3rd Prize in IEEE India Council's M V Chauhan Student Paper Contest   2012
  For my paper titled, The Study and Implementation of Natural User Interface using Kinect; Akhil Guliani. Presented at IEEE Indicon 2012
- IEEE Delhi-Section's Outstanding Student Volunteer Award   2011
  For volunteering in the IEEE Power Systems Conference 2010 and other chapter related events during the year.

PROFESSIONAL SOCIETIES

Institute of Electrical and Electronics Engineers (IEEE), New York, USA

- Student Member   2008 – Present

LANGUAGES

- English: Fluent (speaking, reading, writing).
- Hindi: Native language.

SKILLS

Python, C and C++, C#, Java, LaTeX, MATLAB, Maple, R, Pspice, LabView, Linux Scripting, OrCAD, GEDA, Visual Studio 2010, Android Studio, MCS-51, AVR-core, MSP430, Arduino.

INTERESTS

Squash, Golf, Cooking.

PUBLICATIONS

JOURNALS

[1] Akhil Guliani, Kaicheng Zhang, Seda Ogrenci-Memik, Gokhan Memik, Kazutomo Yoshii, Rajesh Sankaran, Pete Beckman, "Machine Learning-Based Temperature Prediction for Runtime Thermal Management across System Components", Submitted to *IEEE Trans. Parallel Distrib. Syst.*

[2] Renu Guliani, Amit Jain, Swati Sharma, Davinder Kaur, Akhil Guliani, Avinashi Kapoor, "Analysis of Electrical Characteristics using a Lambert W-Function Technique and MATLAB Simulation for Dye Sensitised ZnO Solar Cell", *The Open Renewable Energy Journal*, 2013.

CONFERENCES

[1] Akhil Guliani "The Study and Implementation of Natural User Interface using Kinect", in *IEEE Indicon*, Kochi, Kerala, India, Dec 2012.