Vishal Gupta

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Education

Master of Science in Computer Science and Engineering Aug'16 – Fall'17
University of Florida, Gainesville, US | **GPA 4.0**

Bachelor of Technology in Electrical Engineering July'10 – June'14
Indian Institute of Technology Kanpur, IN | **GPA 7.0/10.0**

Research Experience

Graduate Consultant
Prof. Anand Rangarajan, Dept. of CISE, UF Nov'16 – Present

- Extrapolating the concept of Deep Learning to 2D/3D shape datasets for supervised classification.
- Demonstrated that a shallow network, based on the premise of Deep Learning, can provide comparable results with reduced complexity as against state-of-the-art techniques.
- Improvised approach has the potential to augment various other tasks in machine learning ranging from medical imaging to 3D meshes.

Independent Consultant
Prof. Vinay Namboodiri, Dept. of CSE, IIT Kanpur Feb'14 – Apr'16

- Exploited **spatial feature representation** which out-performed state-of-the-art methods with each added layer of **spatial pyramid**.
- Extended **sample based sub-categorization approach** to multi-class scenario for discovering unique **intra-class discriminative cues** which further **augmented classifier performance by 2-3%**.
- Introduced **spatial sub-categorization** against sample based sub-categorization which **outperformed the later by 4-5%** on various visual recognition task with **SGD-SVM classifier**.

Research Associate
Intelligent Data Engineering and Automation (IDEA) Laboratory, IIT Kanpur May'12 – Dec'12

- Thoroughly analyzed acoustic signals in time, frequency and wavelet domain using **MATLAB Signal Processing modules**.
- Developed **Softmax Classifier** over features from **Sparse Auto-Encoder** network for **vault prediction from acoustic emission**.
- **Prototyped** the fault detection module on **Android** for increased versatility and **validated its feasibility for Air Compressors**.

Professional Experience & Services

Qualcomm India Pvt. Ltd
Associate Engineer Jun'14 – Aug'16

- **Software centric verification** of ARM TrustZone and **virtualization extensions** based IPs, drivers & **Cryptographic engines**.
- **Improvised backend verification infra** by automation **reducing man-hours by 3x & 2x boost in verification coverage**.

Interim Engineering Intern May'13 – Jul'13

- **Detailed mathematical analysis** of pre-silicon verification paradigm in which RTL design is verified against the design behavior.
- **Performed formal verification debugged** failing properties in **AXI/AHB to QSB Protocol** used in AXI cross-bar switch deployed across **all Qualcomm SoCs**.

Extra-curricular Activities

Techkriti (IIT Kanpur's Annual Inter-Collegiate Technology and Entrepreneurial Festival)

Coordinator, Electronic Circuit Design Competition (ECDC) May'12 – Mar'13

- Successfully led a team of 20 individuals in organization of 5 different events conducted under ECDC which included two new events for post-graduate students.
- Managed a budget of **200K INR** among different competitions, prize weightage and other expenses.
- Undertook new initiatives to boost participation from various other schools nation-wide increasing overall participation by **300%** relative to previous year.

Antaragni (Annual Cultural Festival of IIT Kanpur)

Coordinator, Informals Apr'13 – Oct'13

- Successfully led a team of 100 individuals in planning and organization of social and fun-filled activities to be conducted during Antaragni.
- Conducted around 15 activities under the umbrella of *Informals* spread over 4 days, which socially connected around 5-6k participants of Various other events of Antaragni.

Publications

- Zade, Anup & **Gupta, Vishal**. **Software Centric Verification of xPU and other Security Blocks***. In QBUZZ'15, Annual Innovation Conference organized by Qualcomm India Pvt. Ltd.

  *Manuscript unavailable publicly due to Qualcomm's Policy
- Verma, N.K., **Gupta, V.K.**, Sharma, M. and Sevakula, R.K., 2013, June. **Intelligent condition based monitoring of rotating machines using sparse auto-encoders**. In *Prognostics and Health Management (PHM), 2013 IEEE Conference on* (pp. 1-7). IEEE.

Conference Presentations

Oral, June 2013: "Intelligent condition based monitoring of rotating machines using sparse auto-encoders". Prognostics and Health Management (PHM), 2013 IEEE Conference, Gaithersburg, MD, USA.

Awards and Achievements

- **Gartner Group Info Tech Scholarship** at University of Florida in academic year 2016-2017 for having overall outstanding academics and research work among Master Students.
- **Qualstar, Qualcomm India Pvt. Ltd.** for outstanding contribution towards development and verification of Virtual SoCs impacting Qualcomm software teams globally.
- **Merit-cum-Means Scholarship** at IIT Kanpur, IN for consecutive four years from July 2010 to June 2016.

Nationality: India