Pratik Bhangale

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EDUCATION

IIT KANPUR
B. Tech. in Computer Science
Minor in Microelectronics
Jun 14 - Jul '18
CPI: 7.6/10

TANWANI JUNIOR COLLEGE
Twelfth Grade
Grad. May '14 | Maharashtra Board
Percentage: 87.54%

TANWANI ENGLISH SCHOOL
Tenth Grade
Grad. May '12 | Maharashtra Board
Percentage: 98.00%

SKILLS

Programming:
• C / C++ • Python • Verilog
• Javascript • Linux Shell

Libraries and Tools:
• MATLAB • Tensorflow • Keras
• PyTorch • OpenCV • NLTK
• Django • GIT • Perforce • Makefile
• LATEX • GDB • Altium PCB designer

Operating Systems:
• Linux(Arch/Debian) • Windows

COURSEWORK

• Natural Language Processing (A)
• Introduction to Machine learning (A)
• Computer Architecture (A)
• Computer Systems and Security (A)
• Computer Networks
• Compiler Techniques
• Database Management Systems
• Data Structures & Algorithms
• Digital Electronics
• Introduction to Microelectronics

POSITIONS OF RESPONSIBILITIES

• Coordinator, Electronics Club IITK
        Mar '16 - Mar '17
• Sub-head, Team Robocon IITK
        Jul '15 - Mar '16

INTERESTS

• Computer Systems
• Machine Learning and AI
• Microelectronics

PROFESSIONAL EXPERIENCE

SOFTWARE ENGINEER Samsung Research Institute, Noida   June '18-Present
- Part of Android Bring Up team, responsible for Android OS boot on mobile hardware and software upgrades. Currently working on Android Pie projects.
- Finding and Resolving boot anomalies in Android bootloader and kernel.

SOFTWARE INTERN Samsung Research Institute, Noida   May '17 - July '17
- Developed two factor authentication system for Fingerprint called BioHashing.
- Detected core-points in a Fingerprint Image using Gradient Orientation Map and hashed it to multi-dimensional vector to generate a BioHash for preventing misuse of biometric data.

ACHIEVEMENTS

- Recipient of Kishor Vaigyanik Protsahan Yojana (KVPY) scholarship since 2014 by Indian Institute Science, Banglore
- Recipient of National Talent Search Examination (NTSE) scholarship by NCERT
- Second Runners Up in ABU Robocon India 2016 representing IIT Kanpur among 64 participating universities.
- First place in Electromania, Techkriti (Annual Technical Festival of IIT Kanpur)

PROJECTS

DECAPTCHA Prof. Purushottam Kar, IITK | ⌂ source   July '17 - Nov '17
- The objective was to build efficient algorithms to break squirrel mail captchas using deep nets.
- Used K-means clustering and Image Processing tools to overcome heavy noises and clutters cutting through captcha text that makes it difficult for CNN models to work,
- Implemented CNN models from scratch for character recognition which proved to be 98% accurate for character recognition and 85% for entire captcha.

MACHINE COMPREHENSION
Prof. Harish Karnick, IITK | ⌂ source   Dec '17 - Apr '18
- Objective was to help machine understand the comprehension and answer questions.
- Character embeddings of comprehensions and questions were passed into Bi-Directional LSTM layers to extract information vector.
- Question Attention Layer was generated to find out important information in question, which later is multiplied with context to get answer from.
- Model proved to be 97% effective on bAbI dataset by Facebook .

COMPUTER ARCHITECTURE
Prof. Mainak Chaudhuri, IITK | ⌂ source   Dec '16 - Apr '17
- Designed and simulated advanced state-of-the-art cache replacement policies like Least Recently Used(LRU), Static Re-reference Interval Prediction(SRRIP) and Signature-based Hit Predictor (SHiP) using Pintool by Intel on 16 set-associative L3 Cache.
- Implemeted Pipelined MIPS processor with Register Forwarding to avoid data hazards on KSIM simulator.

C TO X86 COMPILER Prof. Amey Karkare, IITK | ⌂ source   Dec '16 - Apr '17
- Developed a full fledged Compiler for a subset of C language for x86 architecture in python.
- Implemented Lexical Analyzer, Parser, 3 address code generator and assembly code generator.
- The compiler supported basic arithmetic, conditionals, mutual recursion, parameterized functions, global declarations and scope handling.

MINI PROJECTS
- Hotel automation system using Django and SQlite.
- File Sharing with user authentication system on Networks.
- OS process sceduling, system calls, page allocation implementation for NachOS.
- Chat Bot with slack and hubot integration to do personalized tasks like setting reminders, fetching emails, adding notes and setting up team meetings.