RAHUL BOTHRA

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OBJECTIVE

I am seeking a research position in the field of Networks and Systems. I have developed an interest and background in the field via relevant coursework and projects.

EDUCATION

Birla Institute of Technology and Science, Pilani - Pilani Campus *Aug '16 - Dec '19*
Bachelor of Engineering (Hons.) Computer Science, GPA : 8.09 / 10

St. Anselm's School, Jaipur *Aug '14 - May '16*
CBSE 2016, Overall: 94.8%

St. Anselm's School, Jaipur *Aug '12 - May '14*
CBSE 2014, Overall: 10 GPA

RELEVANT COURSEWORK

Adv. Computer Networks - **SDN and P4** (ongoing), Computer Networks, Operating Systems, Database Management, Data Structures and Algorithms, Logic in Computer Science, Theory of Computation

PROJECTS

Community Wireless Routing models in NS-3 *Jun '20 - Present*
Under Tom Henderson

- Identifying mesh routing protocols used primarily in community wireless networks (like bat-adv for L2).
- Establishing these protocols in NS-3 and developing models matching real world scale systems for performance analysis and comparative studies.

Heuristic Solutions for Clustered Orienteering Problem *Aug '19 - Dec '19*
Under Prof. Abhishek Mishra

- Investigated efficient heuristic solutions for Clustered Orienteering Problem (Clu-OP) from known heuristic path finding algorithms like Tabu Search, GA, and Swarm Optimization.
- Developed novel solutions using GA and PSO and compared their performances with existing benchmarks for Clu-OP and time-vehicle variants. GA solution was efficient than existing and experimented solutions.

Cross Version Python Support for Sugar *Apr '18 - July '18*
Under Walter Bender - Founder MIT Media Lab

- Implemented cross version Python support for Sugar OS, dependant UX frameworks and networking architecture, motivated by the deprecation of Python 2.
- Enable package consistency across OS distributions (Debian, Fedora) and Python versions (2.3 to 3.7).
- Migrated dbus and Telepathy based networking interface to its PyGObject binding.

Reducing Image Distortion via Object Aware Seam Carving *Aug '18 - Dec '18*
Under Sc. Pramod Tanwar - CEERI Pilani

- Identified conditions where seam carving lead to heavy distortion of certain objects in images.
- Modified the seam finding algorithm to add weighing based on past removed seams to minimize this.

BOB - Bot of BITS *Jan '18 - Mar '18*

- Developed a cloud server chatbot that used trie based indexing to answer common queries of students through Facebook Messenger platform.
- Processed 500+ users and 20,000 messages in the first 10 hours of launch.

WORK EXPERIENCE

Microsoft IDC, Hyderabad Dec '19 - Present

Software Engineer, Azure Migrate, Mentor: Priyank Gaharwar, Senior Engineer

- Building on-premise tools to discover and assess large scale server infrastructure for migration to Azure.
- Developed resilient proxy handling setups and supporting discovery of Linux and Windows VMs over VMware, HyperV, and Physical servers.
- Building resilient distributed discovery mechanism for scale-out and failover mechanism.

Microsoft IDC, Hyderabad May '19 - July '19

Engineering Intern, Azure Monitoring, Mentor: Ravi Shivaprakash, Senior Engineer

- Developed Azure Monitor Support Bot to resolve user queries by providing log monitoring insights.
- Deployed over NodeJS and Typescript implementing the Azure Bot Framework. Implemented RBAC checks and async message handling.

Hyperloop India Sep '16 - July '17

Levitation Engineer, Mentor: Kshitij Khandelwal, Founder Pixxel

- Designed an efficient magnetic levitation assembly for the pod to optimize the lift to drag ratio, based on COSMOS simulations of the Halbach Array design.
- Amongst 24 world finalist teams competing in the SpaceX Global Challenge.

TEACHING AND MENTORSHIP EXPERIENCE

Mentor - Google Open Source Programs

With Sugar Labs *Oct '19 - Present*

- Mentoring college students for summer projects with GSoC - defining project goals, reviewing code, and identifying best solutions, while introducing students to open source working style.
- Mentoring high-school students in GCI, creating byte sized tasks to hone their coding and design skills.

Teaching Assistant - BITS Pilani

Supervised by Prof. Shan B., Prof. Rajesh Kumar and others *Aug '17 - Dec '19*

- Taught 300+ students as TA in Logic in Computer Science (CS F211) and Computer Programming (CS F111) over 5 semesters.
- Designed tutorial questions, conducted weekly classes, designed and evaluated semester projects and lab components for the courses.

Lecturer - Data Science with Python

Supervised by Prof. Yashwardhan Sharma *Jan '19 - May '19*

- Introduced and led an audit course "Data Science with Python", as course incharge and co-lecturer.
- Designed course content, evaluative components and projects, and graded students.

Programming SIG Head Aug '17 - Dec '18

Association for Computing Machinery (ACM) - BITS Pilani chapter

- Closely mentored 30+ chapter members, conducting lectures and events for a range of C.S. topics.

ACADEMIC ACHIEVEMENTS

- Recipient of KVPY fellowship 2015 by Dept. of Science and Technology, Govt. of India
- Recipient of NTSE scholarship 2014 by NCERT Council, Govt. of India

· Recipient of CBSE merit award for being in the top 0.1% of 1.3 million candidates in the subject of Information Practices in AISSE 2016