Choudry Abdul Rehman

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PROFILE

A Computer Science/ Economics double major with a strong background in mathematics, programming logic, and problem-solving, seeking software engineer internship opportunities to enhance my system designs and programming skillset

EDUCATION

Bachelor of Science, Computer Science, Economics (Double Major) GPA 3.98/4.00   June 2022
Knox College. Galesburg, IL

TECHNICAL SKILLS

- Java, C/C++, Python, Chapel, Processing
- CUDA, Heroku, JUnit, Flask, Django, ML (scikit-learn)
- Mac OS, Linux, Windows, Android
- HTML, Javascript, CSS, PHP, SQL

JOBS/INTERNSHIPS

Research Assistant – David Bunde, CS Associate Professor, Knox College   Summer 2020
Shared memory in Heterogeneous Parallel Computing – only first-year on team:
- Wrote C code to compare performance differences between GPU and CPU for SIMD problems, up to 40 times speedup on GPU
- Developed code/instructions for Tiled Matrix Multiplication using CUDA *shared memory*. 400% faster than naive CUDA implementation
- Created tutorial for Chapel Programming Language. Use of *Locales* in Chapel was primary focus
- Created oil painting application using Pixel Binning. Wrote parallelized CUDA version, up to 20 times speedup compared to serial version
- Drafted a tutorial on how to use CUDA C on Google Colab and remote cluster

Assistant Web Developer – Knox College, Communications Department   2020 – Present
- Made a dynamic signature generator web application using Javascript and HTML
- Revamped web applications to newer web frameworks, Vue and React
- Designed a content management system for easy access to dynamic background pictures and tags

Intern Plan9, Lahore Pakistan   Summer 2018
Software engineering intern for emerging business startups at a Tech Startup Incubator
- Designed user-interface using C++ for gesture-controlled wheel-chair
- Revamped the startup's webpage using Javascript and HTML, which led to 50% traffic increase

ITS Lab Assistant   2020 – Present
- Troubleshot network problems and helped college students with printer, network, and remote workstation setups

PERSONAL/CLASS PROJECTS

COVID Simulator – designed a simulator using Processing. Created a graphic interface for user convenience. Added features like mask, levels of social distancing and spread rate

Treasure Hunt – made a treasure game using stacks in Java. Implemented adaptable backtracking to fit various map sizes and treasure locations
Star Clock – created a C program to find time using night sky pictures taken from mobile.
Used CUDA C for 10 times faster isolation of star pixels, noise cancellation, and false star identification than serial version. Used modified DFS, BFS for accurate star midpoint calculations. Implemented triangle algorithm from Lost in Space model for constellation identification
where2apply – Made a college recommendation web application.
Used Python Regex to web-scrape accepted applicants' subjective credentials. Created a custom dataframe using Pandas for 200% faster access to university admission scores and statistics. Made a predictive model for best-fit colleges for users using ML(scikit-learn)

Kya Scope Hai – Created a website for users from Pakistan to look for International schools using Javascript, HTML, PHP

Rubik's Cube solver – used A* algorithm in Java to find the optimal solution to Rubik's cube

OTHER EXPERIENCE

Computer Science Tutor – Helped students learn Java and basic Data Structures and Algorithms at Knox College, Galesburg, IL

Director-General Aitchison College Science and Engineering Concept '18, **–** Led a team of 50 students. Hosted 1000 participants. Designed coding and cipher problems for the event. Was designated as the judge for the final round of event hackathon

Co-Founder, Aitchison College Robotics Club – Founded, budgeted, and organized school's first-ever robotics club; taught Arduino programming using C to 20 Grade 10 children, partnered with a local university to create gesture-controlled robots

International Physics Olympiad – Ranked 1st in Pakistan. Member of National Physics Team Pakistan

Ranked 3rd in **CCSC MW Programming Competition 2020**