Quazi Irfan

quazirfan@gmail.com ● 386-334-4792 ● github.com/quazi-irfan ● Research Blog: medium.com/@quazirfan

Education

M.S. in **Statistics** from South Dakota State University (CGPA **3.4**, Expected Grad. Summer 2021)

B.Sc. in **Computer Science** from South Dakota State University (Major GPA **3.58,** Graduated on May 2018)

Skills

Tools: Java, R, Python, Julia, Gradle, Maven, Git, Bash, Github, GNU/Linux, IntellijIDEA, C, C++, SQL

Areas of Expertise: Algorithm analysis, Database, Linear Algebra, Statistical Programming in R, Multiple Linear Regression, Logistic Regression, Statistical Inference, Cluster Analysis, Multivariate Analysis, Bayesian Statistics

Experience

Graduate Research | Math & Statistics and Mechanical Engineering Departments June 2020-Present

- Investigating robot localization problem using on-board inertial measurement sensors & Kalman Filter
- Implemented path finding algorithm using BFS algorithm (see RoverMapping Github repo)

Graduate Teaching Assistant | Math & Statistics Department

- Contributed content of "Learn R through Examples" textbook by Xijin Ge
- Helped develop R and SAS upper-level and graduate programming courses at SDSU
- Wrote automation script for grading programs written in Assembly language
- Implemented string matching algorithm to check similarity among students submissions

Undergraduate Research | Bennet Scholarship Recipient

- Wrote research proposal and awarded $5000 for "Building a wearable exoskeleton for Virtual Reality"
- Learned to navigate, debug and contribute to large Java project
- Documented development process on Medium at medium.com/@quazirfan
- Published conference paper and awarded top engineering poster at URSCAD 2018

Game Developer

- Wrote a 3D platforming game using Java based game engine (see Rabbit's Fury GitHub repo)
- Developed 2D game engine framework with collision detection (see 2d side scroller GitHub repo)

Programmer | Math & Statistics Dept. Research Team

- Fixed bugs in legacy Java codebase & reverse-engineered binary fix library compatibility
- Setup a modern build system (Gradle) for the codebase that did not have any

Leadership

- Lead the Robotics Club software team; Held multiple ACM seminar on Git and Github
- Participated in Competitive programming and ICPC North Central Regional Contest 2017
- Reported bugs in the following projects: Unity3d, IntellijIDEA and jMonkeyEngine

Notable Coursework

- Analyzed a vehicle fuel efficiency dataset using Multiple Linear Regression that address multicollinearity problem using variation inflation factor (VIF), Ridge and LASSO method.
- Analyzed multivariate dataset using principal component and linear discriminate analysis
- Learned to compartmentalize components of Assembler for SIC-XE instruction set (on GitHub)
- Learned to implement a compiler for Ada to 16-bit Intel 8086 instruction by building a recursive descent parser that generates intermediate Three Address code that is converted to x86 via MASM (on Github)
- Developed a MySQL database front-end that dynamically generates Swing UI by parsing table information
- Implemented algorithms and benchmarked their runtime in independent study on Algorithms

References

Dr. George Hamer, Ph.D.
Assistant Department Head
Associate Professor
Electrical Engineering and Computer Science Department
South Dakota State University
SECS 121
Brookings, S.D. 57007
605-688-5721
George.Hamer@sdstate.edu
(Instructor in CSC-314 Assembly Language, CSC-354 Systems Programming and CSC-446 Compiler Construction)

Dr. Gary Hatfield, Ph.D.
Associate Professor
Mathematics & Statistics Department
South Dakota State University
Architecture, Math & Engineering Building 256
Math & Statistics-Box 2225
University Station
Brookings, SD 57007
605-688-5846
gary.hatfield@sdstate.edu
(Graduate research advisor and instructor in Stochastic process and Probabilistic robotics course)