**Quazi Irfan**

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**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*

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SECS 121

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[George.Hamer@sdstate.edu](mailto: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

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(Graduate research advisor and instructor in Stochastic process and Probabilistic robotics course)