Adil Rabbani

https://adilrabbani.github.io

Email : helloadilrabbani@gmail.com
Mobile : +49-1525-7233762

Education

- **Albert Ludwig University of Freiburg** — Freiburg, Germany
  Master of Science in Computer Science — *Sept. 2019 – Present*
- **National University of Sciences and Technology** — Islamabad, Pakistan
  Bachelor of Science in Computer Science; GPA: 3.16/4.00 — *Aug. 2014 – Aug. 2018*

Experience

- **Fifty2 Technology GmbH** — Freiburg, Germany
  Software Developer (Werkstudent) - Graphics — *Feb. 2020 - Present*
- **Processing Foundation** — Remote
  Google Summer of Code Student - Graphics — *May 2018 - Aug. 2018*
  - **3D shapes**: Implemented missing 3D shapes in p5.js adding 3D arc, point, bezierVertex, curveVertex and quadraticVertex. Fixed issues related to these shapes.
  - **Ported Examples**: Ported "Input" examples from Processing API to p5.js.
  - **Documentation and Test Examples**: Added documentation and test examples related to these shapes.
  - **Medium Article**: Click here to go the medium article.
- **EasyInsurance** — Remote, Pakistan
  Front-end Developer — *Dec. 2018 - Feb. 2019*
  - **Comparison Tool**: Added features to the comparison tool of the website. Sorting insurance company plans according to the user's preference and other filters.
  - **Depreciation Rate Calculator**: Added calculation and displaying of depreciation rate according to a user's data, for car insurance.

Projects

- **Ray tracer (2021)**: Implemented ray tracer in C++ as part of the rendering lab project at the University of Freiburg. Added ray-sphere intersection, ray-triangle intersection and ray-polygon intersection. Added phong illumination model and shadows. Added texturing of spheres and triangles. Added Axis-Aligned Bounding Box as an acceleration structure. Added area lights.
- **Marbles Multiplayer Racing Game (2018)**: Web based Multiplayer racing game that enables users to compete with each other in real-time. Worked on collision detection, designing game level and calculating a player's position with respect to the other player. Used Three.js, Socket.io, Javascript.
- **Pedestrian Detection (2017)**: Pedestrian Detection in images using Histogram of Oriented Gradients as the descriptor and Support Vector Machine as the classifier. Wrote descriptor from scratch to understand the underlying concepts. Used scikit-learn to integrate SVM. Used PIL, Numpy, Python, Scikit-learn.
- **Link State Routing Protocol Simulation (2017)**: Implemented a simulation of Link State Routing Protocol in Python. This involved working with threads for sending and receiving packets on virtual routers. Also worked out the algorithm to detect dead routers in the network. Used Sockets, Threads, Python.
- **Mathemagician (2016)**: Android app for children to help them learn and improve elementary mathematical concepts. App consisted of 6 games for teaching Counting, Addition and Subtraction, Worked on animation, writing logic for all games and designing the application. Used Corona SDK, Lua.
- **IdeaForest (2016)**: A social networking site to unite entrepreneurs and developers on a single platform. Individuals with the right ideas can collaborate with individuals with the right skills. Implemented a real-time notifications system and a chat client using Ajax. Users can post an idea or work together on a project posted by others. Used Bootstrap, Ajax, Javascript, Php
- **Checkers (2015)**: Checkers game against A.I using Minimax Algorithm. Worked on A.I, game rules and implemented graphics. Used SFML, C++.
- **Encryption Algorithms (2014)**: Worked on different encryption algorithms including Caesar Cipher, Solitaire Encryption and RSA Encryption. Used C/C++.
- **PPM Editor (2014)**: Implemented image editor for PPM image format. Used C/C++.

Other Skills

- **Programming Languages**: C++, Python, JavaScript
- **Libraries/APIs**: OpenGL, WebGL, ThreeJS, p5.js
- **Tools/Version Control**: Git, Visual Studio, Unity, Matlab
- **Web**: HTML, CSS, Jquery, Bootstrap, Angular 12

Can Speak

- **English**: C1 Level
- **German**: Still learning. Currently on A2 Level.
- **Urdu**: Mother Tongue