Adil Rabbani

https://adilrabbani.github.io

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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, Ported Examples, Docs and Testing**: Implemented missing 3D shapes in p5.js adding 3D arc, point, bezierVertex, curveVertex and quadraticVertex. Fixed issues related to these shapes. Ported "Input" examples from Processing API to p5.js. Added documentation and test examples related to these shapes. Click here to go the medium article.
- **EasyInsurance** — Remote, Pakistan
  Front-end Developer — *Dec. 2018 - Feb. 2019*
  - **Comparison Tool, Depreciation Rate Calculation**: Added features to the comparison tool of the website. Sorting insurance company plans according to the user's preference and other filters. 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, phong illumination model, shadows, texturing of spheres and triangles, Axis-Aligned Bounding Box as an acceleration structure and area lights. Used C++, pnm image library and tinyobjloader.
- **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.
- **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