# ABRAR AHMED

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## WORK EXPERIENCE

**Master Thesis —** <u>Fraunhofer-Institut für Graphische Datenverarbeitung</u>  Feb 2021 – Jul 2021
- Devised an opensource SSD line detection algorithm from scratch.
- The algorithm is capable of detecting lines with an accuracy of **93%** on general datasets.

**Research Assistant (Software Engineer) —** <u>Fraunhofer-Institut für Graphische Datenverarbeitung</u>  Feb 2020 – Feb 2021
- Built the interface and **APIs** for the TensorRT inference engine from scratch using **Vue.js**.
- Built the **UI** and APIs for the TensorRT inference engine from scratch using Vue.js.
- Contribution to the design of the IGD proprietary VISION client system architecture.
- Modelled feature visualization techniques to trace features learned in **14** bat species.

**Research Assistant (Data Engineer) —** <u>Max Planck Institute for Demographic Research</u>  Jul 2020 – Mar 2021
- Handling of large-scale datasets specifically dealing with **data quality**.
- Data cleaning, management, and implementation of cross validation techniques.
- Statistical analysis and support in the preparation of **visualizations and reports**.

**Werkstudent Software Engineer —** <u>Hamburg Port Consulting</u>  Sep 2019 – Nov 2019
- Automated the **data pre-processing** pipeline reducing the time consumption by **98.3%**.
- Derived the optimal container dwell time prediction by implementing **time-series analysis** and **forecasting** of the container data with an accuracy of 98%.
- In-house application development with **Java** and **Jenkins** for **CI/CD**.

**Freelance Software Engineer**  Jun 2014 – Mar 2019
- Completed **200+** small and big projects by myself.
- **Co-founded** 3 micro-startups (Axisport Lab, Graphimator & Stitch-In)
- Clients: Cryptozilla.io **\***, Medb diagnostics **\*\***, Horizon Tech, Productivenous, Al Wahdat Travels, GiveAKidney, Midwestradar, Chotaay Delivery, UPenn, Flexicom, IFI, Individual entrepreneurs, and many more.

**React Native Developer —** <u>CryptoZilla.io</u> **\***  Feb 2018 – Feb 2019
- Developed a centralized and joint **API system** (5 services) on **Google cloud platform** using Cloud shell.
- Researched and developed tools to formulate **data acquisition** from more than **190** cryptocurrency exchanges.
- Devised various complex but optimized algorithms for computation and logic of the architecture using **React Native** and other tools.

**Front End Engineer —** <u>MedB Diagnostics</u> **\*\***  May 2016 – Aug 2018
- Implemented various E-commerce modules and features including Shipping, payment, front and back-office modules on **Prestashop**.
- Developed modern **UI** from scratch and **optimized landing pages** for mobile and search engines.
- Planned workflows, scenario analysis, and **code review** of several in-house projects.

## EDUCATION

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|---|---|---|
| **MS** | Masters in Computer Science<br>*Universität Rostock, Rostock, Germany* | 2019 – 2021 |
| **BS** | Bachelors in Computer Science<br>*Bahria University, Karachi, Pakistan* | 2014 – 2018 |
| **MPP** | Microsoft Professional Program – Front End Development<br>*Microsoft – EdX* | 2017 - 2018 |

## OPEN SOURCE / FUN PROJECTS

**3-Step Instant Appointment Scheduler**
- A 3-step appointment scheduler built on MERN stack.

**A Form Validator in React Native**
- A one-screen nice-looking form built on react native custom validation rules.

**Error Reporting Tool in Vue.JS**
- A one-page error reporting UI for Vue.js developers and enthusiasts.

**A Novel Bezier Line Object Detection Library**
- A novel SSD based line detection algorithm.

**Real-Time Hand Detection using neural networks (Single Shot Detector)**
- Using neural networks solved the hard problem of tracking hands in real-time using a customized first-person POV hand dataset.


## TECHNICAL SKILLS

### Web / Mobile Front-End Frameworks

HTML5, CSS3, SCSS, Javascript ES5/6, React, Vue.js, Angular JS, React Native, Android, Bootstrap, Material UI, Tailwind CSS, JSON, XML, SQL, jQuery, API Development, Postman, Responsive and Progressive Web Applications, Docker, Jira, Git, Linux, Axure RP, Balsamiq

### Testing Tools and Frameworks

E2E Testing, Component Testing, Cypress, Selenium, Chai/Mocha, Cross Browser Testing, Compatibility and Accessibility, Performance Optimization

### Backend / Cloud / CI-CD

Node.js, Express,js SQL, MySQL, NoSQL, GraphQL, MongoDB, AWS, Azure SQL, Google Cloud Engine, Firebase, Jenkins, Circle-CI

### Others

**Machine Learning, Data Analysis & Computer Vision Frameworks:** Python, Deep learning, Classification, Regression, Object Detection, CNN, OpenCV, Neural networks, Scikit-Learn, TensorFlow/Keras,, Pandas, NumPy, SQL, Seaborn, Matplotlib, Jupyter Notebooks, Clarifai, MS Office, MS Excel, Google Analytics

**UI / UX:** Adobe Photoshop, Adobe Illustrator, Adobe XD, CorelDraw, Premiere Pro, InDesign, After Effects, UI design, Advertisement Design, Branding, Video Editing, Storyboarding