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Profile

- **12 years** of professional programming experience, 16 in total
- **Master in Java**, expert in C++ and intermediate Fullstack knowledge
- **Math enthusiast** with large background in theoretical CS and analysis
- **Passionate teacher**, top user on *StackOverflow*, top helper on *Together Java*
- **Strong academic background** with focus on algorithm development and analysis

Experience (6 of 7)

May 2023 - Present

C++ Flight Simulation Engineer (Lead, Senior)   Heatblur, full remote

`C++23` `Lua` `Typescript` `CEF` `CMake` `GH Actions` `Docker` `Grafana`

- Teamlead, Architectural Design and Development of highly accurate simulations of various aircraft for environments DCS, MSFS and government contracts
- Integration of CEF embedded UI for intuitive interaction with the simulation
- Customer Relationship Management; training and teaching of aircraft physics, systems and sensor platforms

Jan 2022 - Apr 2023

Kotlin Backend Engineer (Senior)   MediaMarktSaturn, full remote

`Kotlin 1.7` `Java 17` `REST` `Spring` `Mongo` `Maven` `DDD` `Pact` `Swagger` `Resilience4J` `WireMock` `Sonar` `GCP` `GH Actions` `Flagger` `Istio` `Docker`

- Development and operation of a high load REST-API serving over 6 million customers per day in the consumer electronics retail sector
- Maintainer of CI/CD, mostly consisting of GCP and GH Actions
- Expert and ambassador for consumer-driven contract testing with Pact
- Recruitment - CVs, interviews, test reviews, onboarding, mentoring

Sep 2021 - Dec 2021

Java Programmer (Senior)   Q2WEB, Germany

`Java 11` `JBoss Drools` `Apache Camel` `Apache Kafka` `SQL` `PostgreSQL` `Oracle DB` `REST` `SOA` `Maven` `Jenkins` `Redmine` `Mantis` `ISO 9001`

- Development of custom software and services, as well as consulting for international clients in the telecommunication sector
- Drool-rules based assistant software for planning network changes, such as which antennas have to be changed for rolling out 5G
- Maintenance and enhancement of old services revolving around serving and synchronizing data from several client databases
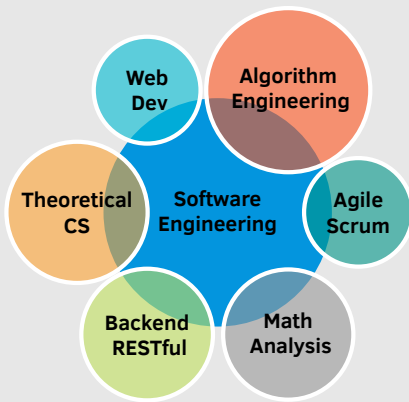
Nov 2018 - Aug 2021

C++ Programmer (Intermediate)   Ubisoft Düsseldorf, Germany

`C++20` `C++17` `C++14` `C++11` `SQL` `Boost` `WinAPI` `REST` `AWS` `protobuf` `Selenium` `CMake` `Jenkins` `Jira` `Scrum`

- Expert on all game download and upload topics in the companies game launcher (*Ubisoft Connect*/*Uplay*), including
  - command-line tool to upload games
  - revamping the patching system (based on *FastCDC*)
  - integrating a new progressive download technology
  - tools for savegame management and migration
- Technical consultant for Selenium based automation tests
- Contact for partners for technical questions (Google, Amazon, Tencent, Epic Games, Denuvo)
- Recruitment - CVs, interviews, test reviews, onboarding, mentoring
- Attending various leadership trainings and leading small teams

Skills

Overview

Programming

Java

C++ • Kotlin

SQL • HTML • JavaScript • CSS

C# • Python • PHP • Lua

C • ActionScript • Perl

Languages

English C2 • German native • Chinese A2

Oct 2016 –
Nov 2018 · **Lecturer & Tutor** · *University of Freiburg, Germany*

`C++11` `Java 8` `Python 3` `Jenkins`

- Assisting students understanding the contents of courses, organization of weekly meetings
- Courses:
  - *Programming in C++*
  - *Information Retrieval*
  - *Algorithms and data structures*
  - *System Design Project*

Nov 2014 –
Dec 2015 · **Owner & Full Stack Developer** · *Gruppe W, Online*

`PHP` `HTML` `JS` `jQuery` `PHP-Fusion` `SQL` `C++11` `SQF` `Photoshop` `Sony Vegas` `Audacity`

- Web development, performance improvement, development of automated web-integrated management software to ease workflow of all members
- Human resource management, project management, mediator
- Development of modifications for ArmA 3, creation of 2D artwork and video editing

Education

2016 - 2018 · **M. Sc., Computer Science** · *University of Freiburg, Germany*

2012 - 2016 · **B. Sc., Computer Science** (GPA: 1.9) · *University of Freiburg, Germany*

Awards

Jan 2017 · **SV-COMP 2017: Gold in Overall** · *ETAPS/SV-COMP*

- Yearly international competition on Software Verification, comparing state-of-the-art tools with respect to effectiveness and efficiency.

Oct 2016 · **RERS Challenge 2016: Gold in Overall** · *RERS / ISoLA'16*

- Challenges revolving around unsolved problems on the topic of Source Code Analysis, model-based testing and test-based modeling. Directly contributing to global research.

Publications

Sep 2018 · **Multi-Modal Route Planning in Road and Transit Networks** · *Preprint arXiv*

Mar 2017 · **Minimization of Visibly Pushdown Automata Using Partial Max-SAT** · *TACAS 2017/Springer*

Mar 2016 · **Minimization of Büchi Automata using Fair Simulation** · *Preprint arXiv*

Technologies ———

Java • Kotlin

Gson, Jackson, Selenium, JSoup, HttpComponents, Swing, JBoss Drools, JUnit, Mockito, Pact, Resilience4J, Logback, SLF4J, Log4j,

JNI, JNA, JMH, JProfiler,

JDBC, Hibernate, OneBusAway, Osm4j, Tomcat, Camel, Kafka, JDA,

Apache Commons, Guava, protobuf, fastutil, Trove, Google Collections, Eclipse Collections

Spring

Boot, Framework, Data, Security, Session, Batch, Web Flow, Web Services, Reactor, WebFlux, Cloud, Actuator, Hystrix

Frontend

AngularJS, Knockout, jQuery, Thymeleaf, Leaflet, PHP-Fusion

C++ • C#

Boost, WinAPI, VSProfiler, Qt, XNA, MonoGame

Databases

MySQL, SQLite, InfluxDB, NoSQL, H2, MariaDB, PostgreSQL, Oracle DB, Flyway, jOOQ. Mongo

Networking

TCP, UDP, HTTP, HTTPS, FTP,

AWS, REST, Swagger, JSON, protobuf

IDEs

Intellij, Eclipse, CLion, VS, VSC

Versioning

Git, SVN, Perforce, GitHub, GitLab, GitKraken, SourceTree, P4Merge, WinMerge

Build Management

Maven, Gradle, CMake, Conan, Ant, GCP, GH Actions, Jenkins, docker, Kubernetes, Flagger, Istio, jib, SonarQube, Resharper, Checkstyle, Spotless

Organization

GitLab Issues, Jira, Confluence, Redmine, YouTrack, Toggl, Grafana, Kibana, SmartRecruiters, KeePass, ISO 9001

Communication

Slack, Discord, MS Teams, MS Outlook

Image • Video

Photoshop, Gimp, OBS Studio, Sony Vegas, Audacity

Projects (8 of 61)

Sep 2021 - Present

TJ-Bot
github/TJ-Bot

`Java 17` `JDA` `Discord` `Gradle` `JUnit` `Mockito` `SonarQube` `Spotless` `SQLite` `Flyway` `jOOQ` `Log4j 2` `SLF4J` `jib` `docker` `Hetzner` `Kanban`

- Leading and administrating the development of a community Discord-Bot
- Creation and development of the underlying system and main architecture, as well as being the main contributor for command and logic programming
- Setup and maintenance of the CI/CD pipelines

Jul 2020 - Aug 2020

FastCDC4J
github/FastCDC4J

`Java 14` `Maven` `gnuplot`

- Highly customizable implementation of a state-of-the-art solution for data deduplication and patching

Nov 2019 - Nov 2019

Maglev
github/Maglev

`Java 9` `Maven`

- Sophisticated and customizable library for solving various shortest path problems using *Module-Dijkstra*, *ALT* and *A**

Apr 2018 - Aug 2018

Cobweb
github/Cobweb

`Java 9` `Gson` `JUnit` `REST` `JDBC` `SQLite` `Logback` `SLF4J` `Apache Commons` `Ant` `AJAX` `jQuery` `Leaflet`

- Development of a backend for a multi-modal journey-planner
- Research, implementation, optimization and benchmarking of shortest path algorithms
- Processing OSM, GTFS and real-time data on huge traffic-networks

Dez 2015 - Oct 2017

Ultimate
github/Ultimate

`Java 8` `JUnit` `gnuplot` `Jenkins` `SonarQube`

- Development, implementation, analysis and benchmarking of algorithms to generate random finite word, infinite word, nested word and tree automata (FA, NWA, TA) and also algorithms to minimize them

Apr 2016 - Oct 2017

Sparkle
github/Sparkle

`Java 8` `Selenium`

- Creation of a robust Selenium driven API for a browser embedded MMORPG which uses web-crawling mechanisms

Mar 2017 - Oct 2017

BeedleBot
github/BeedleBot

`Java 8` `Selenium` `jQuery` `Local Storage` `HTML` `CSS`

- Implementation of semi-automatic Selenium bot that trades items in a browser embedded MMORPG with other players and a frontend injected into the game to monitor the bots state and health

Oct 2016 - Jul 2017

LexiSearch
github/LexiSearch

`Java 8` `JUnit` `JavaScript` `Python 3` `Checkstyle` `REST` `gnuplot`

- Information Retrieval library based on *inverted indices*, *q-grams* and *BM-25 ranking*
- Server offering a search engine as REST API with a light frontend consuming it