

# DANIEL TISCHNER

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## Profile

- **8 years** of professional programming experience, 12 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

Nov 2018 - Present **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/Upplay*), 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

Oct 2016 - Nov 2018 **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

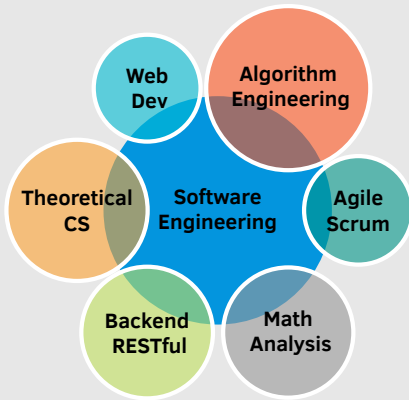
## Education

2016 - 2018 **M. Sc., Computer Science** [University of Freiburg, Germany](#)

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

# Skills

## Overview



## Programming

Java

C++

SQL • HTML • JavaScript • CSS

C# • Python • PHP

C • Lua • ActionScript • Perl

# Languages



## 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 / ISO LA'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](#)

## Projects (12 of 58)

- 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\**
- Nov 2019 - Nov 2019 **Closy** [github/Closy](#)
- Java 9 Maven gnuplot
- Compact library for nearest neighbor computation based on *Cover Trees*
- 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

# Technologies

## Java

Gson, Jackson, Selenium, JSoup, Apache HttpComponents, Swing

JUnit, Logback, SLF4J, Log4j, Checkstyle,

JNI, JNA, JMH, JProfiler,

JDBC, Hibernate, OneBusAway, Osm4j, Tomcat,

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

JWBF, detectlanguage, JavaILP

## 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, VSPProfiler, Qt, XNA, MonoGame

## Databases

MySQL, SQLite, InfluxDB, NoSQL, H2, MariaDB

## Networking

TCP, UDP, HTTP, HTTPS, FTP, AWS, REST, JSON, protobuf

## IDEs

IntelliJ, Eclipse, Visual Studio, VSC

## Versioning

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

## Build Management

Maven, CMake, Conan, Ant, Jenkins, SonarQube, Resharper, Checkstyle

## Organization

GitLab Issues, Jira, Confluence, Toggl, Grafana, Kibana, SmartRecruiters, KeePass

## Communication

Slack, Discord, Skype, MS Teams, MS Outlook

## Image • Video

Photoshop, PhotoFiltre, Gimp, OBS Studio, Sony Vegas, Dxtory, Audacity

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

May 2017 -  
Aug 2017

## TreeFlood

[github/TreeFlood](#)

Java 8 Swing gnuplot

- Implementation of an algorithm to distributedly explore trees and creation of a GUI to visualize the algorithm.

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

Jun 2016 -  
Apr 2017

## Mem-Eater-Bug

[github/Mem-Eater-Bug](#)

Java 8 JNI JNA WinAPI Attach API

- Providing an API which is capable of hooking onto other processes in order to provide memory manipulation methods and the possibility to inject foreign code

Aug 2016 -  
Aug 2016

## DiceCounter

[github/DiceCounter](#)

Lua Blender Photoshop Tabletop Simulator API Steam Workshop

- Tabletop Simulator mod that counts and displays pip frequencies of dices inside a custom box

Apr 2014 -  
Feb 2015

## Antigen

[github/Antigen](#)

C# XNA MonoGame Nuclex C5 Scrum

- Draft and design of an idea for a real time strategy game, creation of a detailed game design document
- Implementation of the game, primarily its logic and fast collision detection solutions