Alexander Ronsse-Tucherov

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Prefer to call? Please email me to schedule a time.

Education

- **Western Washington University** — Bellingham, WA
  Bachelor's of Computer Science — *Sept. 2016 – Dec. 2018*

Work

- **Microsoft via Quadrant Resource** — Redmond, WA
  Software Design And Test Engineer — *Aug. 2019 – May 2021*
  - **Responsibilities**: Support performance engineering efforts on SQL Server products, especially Big Data Cluster. Collect and analyze performance-relevant data from various sources (system metrics, JVM debug data, SQL Server counters, query plans, etc.), with emphasis on Spark and the Hadoop ecosystem. Support and troubleshoot Microsoft and their partners' Big Data Cluster deployments. Research how large (i.e. using 10TB datasets) Spark workloads could perform better on Azure, and use this info to advise Azure Compute and customers.
  - **Skills**: Linux administration, shell scripting, Spark, SQL Server, Scala, low-level and distributed performance analysis, performance analysis in cloud contexts (here, Azure).

General Skills

- **Languages**:
  - **Object-oriented**: **Java, C#**, C++, some knowledge of Scala, Kotlin, and other modern OO languages.
  - **Scripting**: **Python**, some various shell languages, some knowledge of Ruby and Lua.
  - **Lower-level**: **C** (application, systems, and embedded), some experience with x86/x86_64 and ARM assemblies. Experience targeting Linux, the Windows kernel, and ARM microcontrollers (i.e. implemented and used an RTOS).
  - **Functional**: **Haskell**, Racket (and some knowledge of other LISPs).
  - **Databases**: Experience with relational databases (specifically MySQL and SQLite), experience with database connections such as JDBC, Room, and LINQ.
- **Technologies**:
  - **Platforms**: Linux (including administration), Android, Windows, ARM microcontrollers.
  - **Tools**: Experience with Git, release and issue management systems like GitHub and GitLab, common static analysis tools, dynamic analysis tools (e.g. Valgrind, ASan), and commonly-used debuggers and disassemblers (gdb, binutils, radare2).
  - **Techniques, etc.**: OO design patterns, socket-level and some kernel-level networking, some mathematical computing (R, MATLAB/Octave), multithreaded and some distributed programming.

Other Projects

- **Extracurricular**:
  - **Libgen Scan**: Designed and implemented an open-source Android app to help people find ebook copies of their paper books, which has since been downloaded hundreds of times. Available on my GitHub.
- **Selected academic**:
  - **Decoy Substation**: Worked on Windows NDIS driver development and supporting tools (especially with Python) as part of a four-person, one academic year project to make a decoy power substation to aid researchers studying a foreign malware threat.
  - **RTOS**: Implemented a real-time operating system for the LPC1114 (a Cortex-M0 based MCU), including a scheduler. I also applied this RTOS to make an automatic gearing system for a bicycle, which also displays trip data to the rider.
  - **Machine learning tools**: Wrote several machine learning tools from the ground up, including a neural network tool in C that can train and use arbitrarily-shaped networks.
  - **Database management system**: Worked with a team to design and implement a single-user relational DBMS from a specification.
  - **Literally Run Your Code**: Created an Android app in which you walk around to compose programs, and run to run them. Demonstrates my ability to implement a simple programming language, and my ability to work with some popular Android libraries. Available on my GitHub.