

CHELSEA JAGGI

San Francisco, CA • 469-443-8325
tuxcatdeveloper@gmail.com
<https://github.com/feilen>

- Employment:**
- Riverbed Technology, SF, CA** (Software Engineer) **October 2016 - Present**
- Added both virtual and hardware interfaces to the abstraction layer for capturing network traffic, allowing traffic capture on AWS (virtual) and 40/100Gbit fiber (hardware) interfaces
 - Fine tuned several API functions, letting us export over several hundred time ranges at once instead of opening a socket for each, turning an operation which took minutes into seconds
 - Created hardware-specific profiles that forced certain processes on to certain CPUs in a multi-CPU system, ensuring the capture card was directly tied to the CPU
 - Added forced compiler checks that ensure success/fail return values are being consumed
 - Repackaged necessary open-source software for our custom Redhat-based distribution
 - Cleared a considerable amount of legacy code that required explicitly initializing/deinitializing objects, letting the constructor do the work
 - Participated in regular code review and improvement, as well as triaging and reprioritizing bugs, assigning and updating estimates
- Elk Products, Hickory, NC** (Software Engineering Intern) **May 2013 - October 2016**
- Rewrote several server softwares from the ground up to be streamlined, greatly reducing latency and significantly reducing memory and CPU footprint
 - Developed a custom distributed server for devices connecting via a custom protocol
 - Designed an open-source C++11 API and library to abstract away a legacy protocol
 - Wrapped the above API using SWIG, for automated use in Android, iOS, Windows
 - Designed a hardware-independent embedded firmware in C++11
- Education:**
- University of Texas at Dallas, Richardson, TX** **August 2013 - May 2016**
Bachelor of Science in Computer Science
- Collin College, Plano, TX** **August 2011 - May 2013**
Associates of Sciences
- Skills:**
- Programming**
- Strong knowledge of **C++11, Python, C#, JavaScript** and **Java**
 - Experienced in **C99, Perl, PHP, Visual Basic**, and **NodeJS**
 - Experience developing with **Microsoft Visual Studio, Eclipse IDEs**
 - Use of **debugging utilities** (valgrind, GDB, GDB Embedded)
 - Experienced in **Android development**, and creating **cross-platform libraries** with **SWIG**
 - In-depth experience with **Git** and **SVN** version control systems
 - Very experienced in creating **networked applications**, including **distributed servers** and clients
 - Some experience in writing **compilers and interpreters** for custom languages
 - Prior use of **profiling tools** to optimize hot-paths in expensive applications
 - Experience in **threaded applications** and resolving **parallelism issues**
 - Comfortable developing on/for **Windows, Linux, Android** and other platforms
- Embedded Systems**
- Experienced in programming **high-level, hardware independent code** for **embedded systems**
 - AVR/ARM Microcontrollers: **ATMega** and **ATTiny series**, and several **Freescale** processors
 - Resolving issues in provided μ OS to support **high level C++11 firmware**
- Machine Learning**
- Experienced in several **machine learning** toolkits, especially python-nolearn and AML
 - Some experience using **GloVe word embeddings** for **Natural Language Analysis**
 - Experience with **facial recognition** correlation to match users to faces

Projects: Machine Learning

- Implemented a natural-language learning bot for a chat program which attempts to detect inflammatory messages via a neural network, forwarding them to an administrator chat
- Sourced the above implementation to create a bot for a chat program that signs in as me, automatically learning what messages I'd be most interested in and notifying me when they are posted
- Created a facial recognition command-line script that infers which face belongs to which user in a chatroom, automatically exporting VCARD contacts that can then be imported into a phone

Virtual Reality

- Helping develop open-source method for producing optimized variants of any avatar, helping bring the mobile platform in line with the desktop platform via a Blender addon
- Helping develop open source API-level methods for VR locomotion, including vestibular motion and redirected walking (on the Steam store: OVR Advanced Settings)
- Managing the crossplatform work necessary to run Dolphin VR (Gamecube emulator) on Linux, and assisting with the new official support via OSVR
- Development of interfaces for Virtual Reality technology (Vuzix VR920, Wii, Oculus Rift DK1/DK2)

Open Source Community

- Improved the scriptability of MeshLab, allowing for fully automatic point cloud generation/meshing/texturing of 3d scans from video sources
- Ongoing development of VR software for Linux, including VRUI, OSVR, and numerous others
- Active Github user, with numerous contributions (often related to ensuring applications work equally on Windows, Linux and OSX)
- Resolving bugs tracked in GitHub's issue tracker, creating and merging pull requests, and resolving potential issues with PRs via realtime feedback

3D Printing

- Built and continually upgraded a MakerBot Cupcake, a hobbyist CNC 3D printer, including redesign of several individual parts using the OpenSCAD parametric 3D modeler
- Worked with the embedded C firmware code loaded onto the printer motherboard

Misc Projects

- Created and published an Android app for WearOS (on the Play Store: Chordinated Keyboard), which uses a huffman-coded chorded keyboard to allow you to touch-type with muscle memory on only four keys
- Created a calendar bot which scrapes several calendars, formatting them and displaying in a chatroom to encourage San Francisco locals to come to events
- Created a bot which signs in as me on a chat program, automatically detecting when someone posts my name or a picture of my face