

Education

The University of Chicago	2016
Major: Computer Science, B.S.	
Minor: Statistics	
Courses: Algorithms, Formal Languages, Complexity Theory, Networks and Distributed Systems, Computer Architecture, Compilers, Computer Graphics, Computational Linguistics	

Experience

Braintree	Online payments and digital Commerce platform serving 6+ billion transactions per year	2016-Present
Software Engineer, Search	<ul style="list-style-type: none">- Migrated multi-billion document, 100+ node Elasticsearch cluster from a local datacenter to the AWS cloud with 0 downtime or customer impact- Upgraded Elasticsearch cluster to be Active/Active, Disaster recoverable, and multi-region to eliminate downtime- Abstracted Kafka streams pipeline to integrate multiple search applications and sources, including a Datalake and Protobufs, removing the need for dedicated Sphinx services- Updated dozens of Health Checks to run in Kubernetes, increasing consistency and reducing paging volume across teams- Contributed to the open source DataDog Go sdk to enable features for use in Terraformed monitors and dashboards- Wrote documentation and Runbooks to automate common operations, reducing the workload for several teams	
Software Engineer, Docs & Sites	<ul style="list-style-type: none">- Optimized site performance and release process via nginx caching, S3 asset storage, Kubernetes orchestration, and Jenkins Continuous Integration & Deployment, eliminating downtime- Rewrote unified search module using Algolia and a custom parser, increasing searchable text by 600%- Maintained full stack of Braintree and PayPal's highly visible developer documentation and merchant facing websites	
Software Engineer, SDKs	<ul style="list-style-type: none">- Worked on in-house DSL to improve Dockerized development on AWS infrastructure Jenkins continuous integration, reducing costs and execution time by more than 85%- Integrated a new GraphQL backend into existing Ruby, Python, Node, PHP, Java, and .NET SDKs- Integrated Google Pay V2 into the Android and JS SDKs, adding functionality and increasing returns for GP transactions 2x- Introduced API schema validation to verify that all additions to our service were well documented- Started Python tutorial mentorship, participated in open source outreach, and promoted pair programming and TDD- Reduced loading times for Hosted Field elements on merchant checkouts by 30x in slow network conditions	
Revenew	Digital marketing startup bought by Aprimo	2015
Devs Ops & Software Engineering Intern	<ul style="list-style-type: none">- Decreased analysis duration of 14k sites' traffic data by 120x through Piwik open source contributions- Wrote tools to allow Wordpress instances to be cloned, migrated, and patched automatically, incorporating Okta SSO- Introduced continuous integration testing to ensure API reliability during QA and production- Created proof of concept in-browser video editor to enable clients to easily create co-branded advertisements	
Land O'Lakes	Digital solutions for agricultural problems, global feed distribution, and dairy foods co-op	2013-2014
Project Management & Software Engineering Intern	<ul style="list-style-type: none">- Directed development of an internal iOS app, including leading scrum meetings with an offshore team, problem discovery with stakeholders, fault tolerance testing, documentation, and user testing- Produced ELMAH client-side error gathering framework for use in live ASP.NET applications- Engineered pipeline to scrub existing receipt database while increasing OCR readability of ingested data- Hardened login of co-op portal against XSS and SQL injection, while improving logging and location data collection	
The University of Chicago		2012-2016
Computer Technician	<ul style="list-style-type: none">- Conducted Tier 1 & 2 technical support for faculty and staff, educating them on best practices and issue avoidance- Performed onsite hardware repair, data recovery, inventory management, documentation, and triage	
Skills	Full Stack Development, Jenkins & Travis Continuous Integration, Pair programming, Test Driven Development, SDK Design, Technical Writing, Rails, Linux system management, Android, Web development, Vim & Tmux, Docker, Kubernetes, Language Design, API design, Website ops, Mentoring	

Languages

Proficient: Ruby, Python, Node, Javascript, Java, C# .Net, PHP, C++, Arduino/C, Bash/Zsh, R, SQL

Familiar: Objective-C, OpenGL / GLSL, Haskell, SML, Assembly (6502 & x86), Perl, Yacc, awk, sed, G-code

Projects

Personal Projects	https://github.com/jackellenberger/
Emoji.me	An improvement on my work on emoji packs, with a complete rewrite adding bulk emoji download, upload, syncing, and statistics through a reverse engineered undocumented slack api endpoint. Published both as an npm module and a command line tool, Emoji.me allows me to keep 20,000 emoji synced across multiple slack instances, and has (I believe) been instrumental in forcing Slack to rewrite their /customize page several times over the last few years.
Slack Yaml Manager	A hybrid Slackbot and standalone program to allow Slack users create, edit, and run arbitrary jobs based on a shared yam! schema.
TEAAS	A site to apply useful transformations to basic emoji. My role was to improve the post-creation experience, allowing users to download the emoji they create or upload them directly to slack.
Emoji packs	A codebase designed for importing bought emoji to Slack, co-opted to enable people to transfer and sync emoji between instances. Uses phantomjs to interact with Slack's frontend, making it slower and more brittle than Emoji.me.
html-to-text	A highly extensible parser , improved upon to better handle complex tables present in Braintree's developer docs . Used as part of Braintree's federated search parser.
Yam!LineNumbers	A lightweight library to surface source line numbers in parsed ruby hashes, used extensively internally to help identify and resolve issues with kubernetes configs , static allowlist/blocklists, and programmatic documentation.
HaskellCsvMuncher	A completely overwrought way to convert csv documents into more useful docs. For example, converting this resume into a markdown document for applications, plaintext for linkedin, and html for ellenberger.zone
Awesome-o	A stateless Slackbot for parsing Trello boards, tracking open source issues, and crawling internal servers to provide a daily digest of to-do's on Slack.
Jabiru Medical	A Northwestern University incubated medical startup in Chicago, involving an Arduino powered proof of concept device designed to help pregnant women understand stressors on crucial muscle groups.
Phyllo.apk	An experiment in location based distributed information sharing, essentially Hacker News where articles spread literally as viruses do, from carrier to carrier based on location and proximity. Includes an Android app and Django backend.
ellenberger.zone	A personal website with pages for each of my family members.
FossFazor	A 3D printed waveguide for Orthodynamic headphones based off the Audeze model, with designs distributed freely and printed parts sold for a fraction of the real thing.
Mu!tiplication	A Python interface for radioligand binding assays to determine solubility of novel and published Dopamine D2 receptor-like ligands to be used by the Newman Group at the NIH.
ShowProdDehydron	A 3D viewer for displaying Dehydron distribution in proteins, written in Python.
oGrocer	An Android app to crowdsource current food price trends and give consumers complete price knowledge about what to buy, where to buy it, and when best to go.
Gerrymeleon	A GPGPU project in its infancy to calculate and solve Efficiency Gap problems created by gerrymandering
University Projects	
C	PintOS Kernel, TCP Protocol, Ray Marching Algorithm, Moving Average Analysis
Standard ML	F!ang Compiler
Python	Optical Character Recognition Model, Protein Data Mining Process, Linguistic Analysis HMM
C++	TEC based Ice 3D printer mod, Convolution Neural Network, Basic Game Engine