

Elias Julian Marko Garcia

<https://ageof.info>
elias.jm.garcia@gmail.com

Old Westport
Kansas City, MO 64111

About Me

First generation American born and raised in KC, MO that fell into programming. My interests include social science, systems programming, programming language theory, and decentralization. My work experience primarily involves working with standards, parsers, and greenfield projects, often at the same time. My spare time is currently taken up by experimenting with Rust and OCaml, reading Baudrillard, and tilting my head at windmills. My favorite hip-hop group is the Wu-Tang Clan, and they *will be respected*.

Education	University of Missouri-Kansas City <i>Bachelor of Science, Computer Science</i>	May 2020
Skill Set	<p>Programming: Six years of programming, including:</p> <ul style="list-style-type: none"> languages: OCaml, Rust, Lua, Python, Lisp, Haskell, SQL, L^AT_EX, TypeScript, Java, C++, and JS/HTML/CSS. frameworks: React, Flask, and Rocket. operating systems: Linux (Debian derivatives and Arch) and macOS. applications: Nginx, Chef, Vagrant, Emacs, Git, IntelliJ, Postman, AWS S3, GitLab CI/CD, Matrix, and Docker. standards: PDF-1.7 and 2.0, HL7 V2.x <p>Social science: Five plus years experience with economic policy, especially political economy and financial economics. Extensive research experience.</p>	
Experience	Software Engineer August 2020 - November 2021	Special Circumstances Fully remote and distributed Led by Sergey Bratus, worked on DARPA's SafeDocs program with other primary investigators and collaborating organizations to research and improve methods of securely parsing unverified and untrusted binary data, i.e. the PDF standard, along with how to prove properties of generated parsers and documents via formal methods. In this role, I became very familiar with PDF-1.7/2.0 standard and modern parsing techniques, helped to develop a novel parser-grammar DSL built with Lua and C, and co-authored research on generating PEG-based parsers with verified properties.
	Rust Belt Rust Workshop Presenter October 2019	Rust Belt Rust Conference Dayton, Ohio Taught a full day workshop on implementing a lisp programming language, Ferrisp, using Rust.
	Software Engineer summers of '16, '17, '18, '19	Cerner Corp. Kansas City, MO I worked on Millennium, PopHealth, and Cerner Interop. For Millennium, I improved automatic localization. For PopHealth, I improved the automation of pipeline deployment and expanded infrastructure testing capabilities. While on Interop, I worked on a new solution for payer verification of healthcare claims by implementing an HL7 2.x parser with Rust as a CPython extension.
	Vice President fall '18	Truman State ACM Kirksville, MO Helped re-launch Truman's ACM chapter and regain our status with the national ACM program.
	Writing Consultant fall '16 — fall '18	Truman State Writing Center Kirksville, MO Helped edit and review papers of undergraduate and graduate students for classes and publication. Additionally, I was a writing fellow for Professor Gillette's ECON210 class.
	Undergraduate Researcher summer '16	Truman State McNair Program Kirksville, MO Participated in the McNair post-baccalaureate summer research interim, focusing on financial markets and financial crisis of '07.
	Research Fellow summer '15	Independent Institute Oakland, CA

Assisted the institute in its re-branding, assisted in researched for full time fellows, and edited peer reviewed materials.

Publications and Research **LangSec Workshop at IEEE Security & Privacy Symposium** May, 2021
“*Accessible Formal Methods for Verified Parser Development*”
Li, Eakman, Atman, and Garcia

Projects **Papers We Love KC:** Before put into slumber by COVID-19, I started and sponsored the Kansas City chapter of Papers We Love, a monthly meet-up to discuss major papers and topics across the fields of computer science and computer engineering.

Pincers: Social media website based on twitter and built entirely with Rust’s Rocket Framework and PostgreSQL.

HL7 2.x Parser: Implemented from standard a commercial HL7 2.x message parser using Rust and the parser-combinator Nom library.

Clear My Record Kansas City: Collaboration between UMKC’s Law School, Code For Kansas City, and municipal government to start a free criminal record expungement clinic with open source software. Developed the back-end prototype using Flask and SQL.

Open Tabularius: Hack-a-Roo (spring ’18) project for the Hogan charter school system for automating the intake and analyzing of student data. **Finalist submission.**

Don’t Mix It!: Cerner intern Ship-It (summer ’18) project to reduce adverse drug reactions (ADR) with an android app. Group project. **Second place submission.**

#Hashtag-Health: Cerner intern Ship-It (summer ’17) project that visualized real time tweets pertaining to health coded phrases, keywords, and hashtags. Group project. **Third place submission.**

Tomaty: A python implementation of the Pomodoro Technique using GTK.

Twitter Bots: Implemented multiple bots using Python. Between all of them, I used the Dark Sky Weather API, Stanford’s NLTK for text processing, Python’s Pillow imaging library, PyPDF for PDF parsing, and lots of e-lisp regex’ing.

ageof.info: Third re-implementation of my personal blog, now using the Rust-based static site generator Zola, [my own theme port](#), AWS S3 for static hosting, and GitLab CI/CD for automation of deployment.

Awards and Honors **PLMW Scholar** 2018
ACM SIGPLAN

Strange Loop Scholarship 2017, 2018, 2019
Project Alloy

Oscar and Susie Newton Memorial Scholarship 2019 — 2020
University of Kansas City-Missouri

DST Systems Computer Science Scholarship 2018 — 2019
University of Kansas City-Missouri

McNair Scholar 2015 — 2017
Truman State University

President's Honorary Scholarship
Truman State University

2014 — 2017

MO Scholar
Missouri Scholars Academy

2014