

# Carson Radtke

Software Engineer @ GrammaTech

## ADDRESS

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## ABOUT ME

I am currently a Software Engineer at GrammaTech where I work on CodeSonar, a static code analysis tool. I graduated in 2021 from the University of Wisconsin, Milwaukee with degrees in Computer Science (B.S.) and Mathematics (B.A.). My interests are compilers & programming language theory and eventually I would like to go back to school to pursue an advanced degree.

## WORK EXPERIENCE

### Software Engineer - Compiler Front End/Parsing

GrammaTech

(September 2021 - Present)

As a software engineer at GrammaTech, my focus is on the CodeSonar SAST product. I write analyses to identify C/C++ standard violations that may result in security vulnerabilities or undefined behavior. I was also part of a contract for the US Military where a coworker and I took a research paper and turned it into production-ready software.

### Compiler Engineer (Contract)

Astronautics

(July 2021 - October 2021)

As a compiler engineer at Astronautics, I am responsible for the design and implementation of a domain specific language that compiles to a proprietary instruction set. I built the compiler from the ground up and I implement algorithms for all phases of the compiler (lexer, parser, analyzer, generator) including writing test cases using a hand-built test suite to validate compiler correctness.

### Software Development Intern

CaraFlow

(January 2019 - June 2021)

As a software development intern at CaraFlow, I was responsible for writing software in a variety of projects. I implemented features and bug fixes for legacy software that runs in over half of hospitals nationwide. I wrote drivers and implemented REST APIs to allow e-paper devices to update their displays wirelessly. I was tasked with architecting and managing the cloud services architecture for multiple projects using Microsoft Azure.

## EDUCATION

### University of Wisconsin, Milwaukee

Bachelor of Science Computer Science

(September 2018 - May 2021)

Electives: Compilers, Computer Graphics, Computer Security, Machine Learning

### University of Wisconsin, Milwaukee

Bachelor of Arts Mathematics

(September 2018 - May 2021)

Electives: Abstract Algebra, Chaos Theory, Real Analysis, Statistics

## PROJECTS

### ModelGen

<https://github.com/carsonRadtke/ModelGen>

I enjoy playing around with public APIs, but creating typed models for responses can be a hassle. To solve this issue, I created a program built on ANTLR to parse JSON output and generate a C# class file containing model definitions for the API response. All that is required for the program is a URL to the endpoint and it outputs the C# model.

### Personal Website

<https://nosrac.me>

I built my personal website using JavaScript (with JQuery) and Bootstrap and it contains links to various professional social media as well as my resume. It is hosted on an instance of Microsoft Azure's Static Web App.

### NASA APOD Projects

[https://github.com/carsonRadtke/nasa\\_apod\\_background](https://github.com/carsonRadtke/nasa_apod_background)

I utilized NASA's public Astronomy Photograph of the Day (APOD) API to write a program for both Windows and OS X to change the user's desktop background on a daily basis. I also used the same API to create a Discord bot that displays information about the current photograph of the day.

## LANGUAGES

English

Native

Spanish

Intermediate

Russian

Basic

## AWARDS

Magna Cum Laude

University of Wisconsin, Milwaukee

May 2021

Awarded to students who achieved a cumulative GPA above 3.65 in their undergraduate studies.