

# Aaron Agarunov

## Software Engineer

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## Experience

### Software Engineer IV, Memorial Sloan Kettering Cancer Center

May 2018 – Present

New York, NY

- Designing, developing, and maintaining clinical bioinformatics software systems across the Pathology department for treating 60k+ patients
- Collaborating with computational biologists, physicians, and engineers to architect and implement performant UI for reviewing results from industry-leading high-throughput clinical tests, using React, Python, SQL and NoSQL
- Created an internal JavaScript framework and monorepo for teams of >20 developers to reduce code duplication, improve DX, hasten prototyping, and introduce design unity across web apps for different MSK labs and assays
- Led a rewrite of our core web applications, optimized query times, and introduced web performance patterns like budgets and code splitting
- Reduced TTI and FID by 80%+, LCP by 70%+, network usage by 90% on analysis and results case views, our most visited pages across all assays
- Improved workflow efficiency for laboratory teams by creating automated worklists and APIs to manage quality control for clinical sequencer runs
- Introduced JavaScript and Python development tooling, error tracking, APM, pytest utilities, and Cypress end-to-end testing into various CI/CD pipelines

### Research Assistant, CUNY Hunter College

August 2015 – August 2017

New York, NY

- *Gaussian Network Modeling of Hepatitis C Virus NS5A Protein* under Dr. Lei Xie

## Projects

- 🔗 **q3p** ◦ Consulting agency for premier music and gaming entities
  - Develop and maintain website and Discord bots for 500k+ daily active users
  - Grow and coordinate strategy for feed infrastructure reaching 2M+ DAU
- 🔗 **Foton** ◦ Single-page application for photo sharing, cloning 500px.com
  - Implements an infinitely scrolling photo feed with pagination and virtualization
  - Provides *Explore* page to browse and follow recommended users and photos
  - Includes site-wide full-text search for photos, tags, and users
  - Supports image uploads to AWS, displays photos in optimal resolutions for network, and allows users to edit image post details
- 🔗 **kume** ◦ Interactive visualization of color quantization using k-means clustering to find dominant colors
  - Leverages Canvas and SVG layers to performantly visualize dominant colors
  - Implements the CIELAB color space and  $\Delta E^*$  color difference to compute accurate color distance comparisons in k-means assignment
- 🔗 **ronivonu** ◦ Generative art created in JavaScript, Python, and Processing
- 🔗 **Pathing** ◦ Interactive demonstration of maze generation and common searching algorithms

## Skills

### Languages

JavaScript, Python, Ruby, SQL, HTML, CSS, Sass

### Libraries, Frameworks

React, Flask, jQuery, OpenAPI, Next.js, Gatsby, Rails, Node.js, Jekyll, Cypress, pandas

### Tools

Git, Docker, GitLab CI, GH Actions

### Design

Figma, Photoshop, TouchDesigner

## Education

### App Academy

New York, NY

November 2017 – February 2018

Full-stack web development course

- 1,500+ hour curriculum teaching in Ruby and JavaScript
- Emphasis on CS fundamentals, design patterns, OOP, TDD

### Macaulay Honors College at CUNY Hunter College

New York, NY

August 2013 – May 2017

B.A. in Chemistry & Bioinformatics, Minor in Mathematics

- Data Science Pipeline Fellowship, June 2016
- Full Merit Scholarship, 2013 – 2017

## Hobbies

Music discovery, photography, generative art, competitive gaming, graphic design, calligraphy