Aaron Agarunov
Senior Software Engineer

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Experience

Software Engineer IV, Memorial Sloan Kettering Cancer Center | New York, NY
Pathology Results Team, Clinical Bioinformatics Group | May 2018 – Present

- Architect and implement performant web apps for high-throughput clinical data supporting **100k+ patients** using **React, Flask, MySQL,** and **MongoDB**
- Built an internal **JavaScript** framework and CI/CD pipeline for teams of **>20 developers** to reduce code duplication, standardize tooling, and introduce design unity
- **Redesigned and rewrote core UIs** with optimized query times, code splitting, end-to-end testing, and application monitoring, **decreasing clinical report turnaround time by 20%**
- Improved web performance metrics, **reducing First Input Delay and Largest Contentful Paint by 70%**
- Collaborated with engineers, biologists, and physicians to build quality control pipelines, services, and portals including lab data transformations, genomic visualizations, and algorithms for provider case management
- Implemented **Python** data loaders with **2x faster speeds** and managed deployments using **Airflow** and **nginx**
- Continually mentor and direct full-stack projects for junior and mid-level software engineers

Research Assistant, CUNY Hunter College | New York, NY
Lei Xie Lab, Quantitative Biology Group | August 2015 – August 2017

- Published *Gaussian Network Modeling of Hepatitis C Virus NS5A Protein*

Education

App Academy | New York, NY
Full-Stack Development Course | August 2017 – February 2018

- 1,500+ hour curriculum teaching web development fundamentals, OOP, and TDD

Macaulay Honors College | New York, NY
B.A. Chemistry & Bioinformatics, Minor: Mathematics, GPA: 3.95 | August 2013 – May 2017

- *Data Science Pipeline Fellowship* (2016), *Full Merit Scholarship* (2013 – 2017)

Projects

q3p ∘ Consulting agency building communities for premier music artists
- Design, develop and maintain agency website (**Next.js**) and Discord bots (**Python**) for 700,000+ DAU

Turbo Starter ∘ Template to build microfrontend **React** apps with Turbo, Vite, Storybook, testing, tooling, docs
Foton ∘ Single-page React application for photo sharing with Rails backend, AWS S3, infinite scrolling, and search
kume ∘ Interactive visualization of color quantization using k-means clustering to find dominant colors
ronivonu ∘ Generative art created in JavaScript, Python, and Processing

Skills

Languages: JavaScript, Python, Ruby, SQL, HTML, CSS
Libraries, Frameworks: React, Flask, OpenAPI, Next.js, Cypress, Gatsby, Node.js, pandas
Tools: Git, Docker, GitLab CI/CD, GitHub Actions, nginx, Apache Airflow, ELK
Design: Figma, Adobe Photoshop, Lightroom, Illustrator

Publications

Khwaja E, Song YS, **Agarunov A**, Huang B. CELL-E 2: **Translating Proteins to Pictures and Back with a Bidirectional Text-to-Image Transformer**. *In Submission*.⬈

Brannon AR, Jayakumaran G, Diosdado M, [et al, including **Agarunov A**]. **Enhanced specificity of clinical high-sensitivity tumor mutation profiling in cell-free DNA via paired normal sequencing using MSK-ACCESS**. Nature Communications 12, 3934 (2021). https://doi.org/10.1038/s41467-021-24109-5