Neema S. Sadry

SOFTWARE ENGINEER & NEUROSCIENTIST

neemasadry@gmail.com • **(810) 434-3277**

GitHub: neemasadry & snake117 | **LinkedIn:** neemasadry

– Work Experience –

Software Engineer Intern – InfluxData May 2022 – Aug 2022

- Built general marketplace simulator app (GeMS) for AWS using Elixir, Phoenix, Ecto, PostgreSQL, and Tailwind CSS, which was used to simulate roughly 70% of the user onboarding process; worked on all levels of Phoenix app.
- Designed and built a queuing and notification service to send user-registration messages to local queues during the subscription process; 40% faster performance. Local queue polling at regular intervals to simulate AWS SNS & SQS; built using ExAWS and ElasticMQ (running in Docker), which stored dynamically sent notifications.
- Undertook agile and TDD practices during pair programming and code review sessions with team utilizing Git/GitHub, CircleCI, ConfigCat, Kubernetes, etc.; able to navigate *Quartz* codebase, which runs InfluxDB Cloud.
- Collaborated with other interns to build a stock trading model using Python & InfluxDB during Hackathon week.

– Projects –

Caliber [Render] – Rails app, Scrapy, and ML projects (private repos) May 2023 – Present

Premier social network for exploring the fashion world. *Participated in Y Combinator's Startup School*

- Ruby on Rails app where users can create, share, and review outfits and products from popular brands.
- Learned MVC architecture, REST, DRY code, database design, job processing, file uploading, test-driven development, I18n, production deployment, CI/CD, cloud services, project management, UI/UX, etc.
- Achieved responsive design for various screen sizes by using Tailwind CSS and Hotwire.
- Deployed app successfully to production on both Heroku (CI/CD via GitHub Actions) and Render.
- Integrated cloud services like AWS S3 and CloudFront via ActiveStorage for storing and serving files through a CDN, respectively, and Meilisearch Cloud for sitewide-search functionality.
- Used Ruby gems like: *pagy*, *noticed*, *devise*, *pundit*, *sidekiq*, *faker*, *friendly_id*, *ancestry*, *money-rails*, etc.
- Extracted, sanitized, and stored 10,000+ products (~100 GB total) on AWS S3 from popular brands (e.g., *Dior*, *Fendi*, *Prada*, *Nike*, *Zara*, etc.) by writing custom Scrapy spiders for each of their website/API.
- Optimized and refactored spiders by minimizing requests to servers while abstracting and reducing code per spider, achieving full product data extraction ethically. Metrics: Reduced requests by 50%, decreased spider LoC by 30-70%.
- Mastered diverse concepts independently, spanning XPaths/CSS selectors, data sanitization, dynamic HTML scraping, bypassing bot detection systems (e.g. Cloudflare), and utilizing browser dev tools for analyzing network activity, HTTP headers, and HTML/JSON content structures.
- Used SQLAlchemy to interface Scrapy project with PostgreSQL and Alembic for database migrations.
- Prevented repeat crawl sessions entirely by backing up data in JSON Line file batches, and subsequently uploading them to AWS S3, after experiencing two events where all scraped data of certain brands were lost on local machine.
- Brainstorming solutions for precise product categorization using machine learning and NLP.

Computer Graphics using C++ & OpenGL Feb 2023 – April 2023

- Created a 3D video game environment using C++, OpenGL, and Visual Studio IDE. Built custom systems for rendering the current viewport's frame, importing various file types (e.g., OBJ, textures, images, etc.), rendering a skybox, keyboard inputs, local illumination, shading, global illumination processing with ray tracing, etc.
- Rendered 3D models by first writing a Python script (OpenCV) to extract images from 4K videos of rotating models, then heavily processed by GPU in COLMAP (Poisson) for point cloud data used to render model in MeshLab.

Parallel Computing in C/C++ with Pthreads, OpenMP, and MPI Sep 2022 – Dec 2022

- Assignments from my Parallel Computing I: Programming course; comparing parallel vs sequential implementations.
- Used C & C++, a few libraries/APIs, and the university's grid for high-performance computing (HPC). Examples:
- (1) Adding two 256x256 matrices using Pthreads, (2) Adding two 2048x2048 matrices using MPI on 8 processors, (3) multiplying two square matrices using OpenMP with 1, 2, …, 32 thread sizes, (4) and parallelized odd-even algorithm.

– Education –

WAYNE STATE UNIVERSITY – COLLEGE OF ENGINEERING **Detroit, MI**

M.S., Computer Science, with concentration in Artificial Intelligence Aug 2021 – Aug 2023

Post-Baccalaureate Coursework, Computer Science – GPA: 3.86 Sep 2019 – May 2021

WAYNE STATE UNIVERSITY – SCHOOL OF MEDICINE **Detroit, MI**

M.S., Basic Medical Science May 2017

UNIVERSITY OF MICHIGAN **Ann Arbor, MI**

B.S., Neuroscience with minor in Near Eastern Languages and Cultures May 2014

– Research & Publications –

- Asmaro, K. P., John, J. K., Massie, L. W., Sadry, N., & Lee, I. Y. (2018, October 6). *Ventricular Plugging is a Safe and Effective Solution to Ventricular Entry during Tumor Resection Surgery*. Congress of Neurological Surgeons 2018 Annual Meeting, Houston, TX. https://www.cns.org/meetings/archived-abstracts-detail/congress-of-neurological-surgeons-2018-annual-meeting-25546
- Rammo, R. A., Poisson, L., Robin, A. M., Sadry, N., Raghunathan, A., & Lee, I. Y. (2015, September 26). *Somatostatin Receptor mRNA Analysis for Atypical and Anaplastic Meningiomas*. Congress of Neurological Surgeons 2015 Annual Meeting. https://www.cns.org/meetings/archived-abstracts-detail/congress-of-neurological-surgeons-2015-annual-meeting-17375
- Zhang, L., Chopp, M., Emanuele, M., Wei, M., Sadry, N., & Zhang, Z. G. (2015, February 3). *Combination of Vepoloxamer and tPA extends the therapeutic window of stroke*. HFHS Research Symposium; International Stroke Conference.
- Zhang, L., Sadry, N., Wei, M., Cui, Y., Chopp, M., & Zhang, Z. G. (2015). *Effects of Potential Neuroprotectants in Aged Diabetic Rats After Stroke*. 2015 International Stroke.
- Robin, A. M., Sadry, N., Raghunathan, A., & Lee, I. Y. (2013, October 19). *Correlation between WHO 1 meningioma location and MIB*. Congress of Neurological Surgeons 2013 Annual Meeting. https://www.cns.org/meetings/archived-abstracts-detail/congress-of-neurological-surgeons-2013-annual-meeting-13357
- Sadry, N., Suryadevara, R., & Parajuli, P. (2018). Immune Infiltration in Malignant Gliomas. In *Nanotechnology-Based Targeted Drug Delivery Systems for Brain Tumors* (pp. 359–374). Elsevier. https://doi.org/10.1016/B978-0-12-812218-1.00013-0
- Jiang, Q., Zhang, L., Ding, G., Davoodi-Bojd, E., Li, Q., Li, L., Sadry, N., Nedergaard, M., Chopp, M., & Zhang, Z. (2017). Impairment of the glymphatic system after diabetes. *Journal of Cerebral Blood Flow & Metabolism*, *37*(4), 1326–1337. https://doi.org/10.1177/0271678X16654702
- John, J. K., Robin, A. M., Pabaney, A. H., Rammo, R. A., Schultz, L. R., Sadry, N. S., & Lee, I. Y. (2017). Complications of ventricular entry during craniotomy for brain tumor resection. *Journal of Neurosurgery*, *127*(2), 426–432. https://doi.org/10.3171/2016.7.JNS16340
- Kassis, H., Shehadah, A., Li, C., Zhang, Y., Cui, Y., Roberts, C., Sadry, N., Liu, X., Chopp, M., & Zhang, Z. G. (2016). Class IIa histone deacetylases affect neuronal remodeling and functional outcome after stroke. *Neurochemistry International*, *96*, 24–31. https://doi.org/10.1016/j.neuint.2016.04.006
- Zhang, L., Chopp, M., Zhang, Y., Xiong, Y., Li, C., Sadry, N., Rhaleb, I., Lu, M., & Zhang, Z. G. (2016). Diabetes Mellitus Impairs Cognitive Function in Middle-Aged Rats and Neurological Recovery in Middle-Aged Rats After Stroke. *Stroke*, *47*(8), 2112–2118. https://doi.org/10.1161/STROKEAHA.115.012578

– Skills –

Languages: Ruby, Python 3, Elixir, JavaScript, C, C++, C#, HTML, CSS, SQL, Lua; *Go*, *Rust*, *Java* (beginner)
Libraries: Rails, Hotwire, Sidekiq, Scrapy, Phoenix, Tailwind CSS, React.js, Next.js, NumPy, SciPy, matplotlib, scikit-learn, OpenCV, OpenGL, Pthreads, OpenMP, MPI; *TensorFlow*, *PyTorch*, *Keras* (beginner)
DBs: PostgreSQL, MySQL, Ecto, ActiveRecord, SQLAlchemy, Alembic, MongoDB, Redis, Meilisearch, Elasticsearch, InfluxDB, NoSQL, GraphQL
Cloud: GitHub, GitLab, Fly.io, Heroku, AWS, Zyte, CircleCI, Meilisearch Cloud, Cloudinary, Namecheap, Stripe, Font Awesome
Misc: Git, Homebrew, asdf, iTerm, Docker, ElasticMQ, Sublime Text/Merge, VS Code/IDE, COLMAP, MeshLab, Unreal Engine 5, Unity, Roblox, Xcode, NPM/Yarn, Office 365, Windows, macOS, Linux, Postman, 1Password, Obsidian, Splash, Selenium, Webpack, Building Computers
General: Software Engineering, Web Development, Backend, Full-Stack, MVC, REST, Test-Driven Development (TDD), Version Control, Web Scraping, Game Development, Data Structures, Algorithms, Graphics Programming, Operating Systems, DevOps, Cloud Services, IaaS, PaaS, Search Engines, Networks, HTTP/S, TCP/IP, UI/UX, Cybersecurity, Parallel Computing, Artificial Intelligence, Machine Learning, Object-Oriented Design, OOP, Functional Programming, DNS, Bot Detection, Payment Processing, Regular Expressions (RegEx)
Other: Farsi (Persian), Neuroscience, Biomedical Science, Lab & Clinical Research, Piano, Warhammer 40K