|  |  |
| --- | --- |
| Hemanto Bairagi | 7-56 Radcliffe Cres S.E, AB T2A 6L9 Calgary T2A 6L9, 7-56 Radcliffe Cres S.E, AB  5872168171  hemanto.bairagi@alumni.ucalgary.ca |

Summary

* Software Engineering specializing in Machine Learning, Artificial Intelligence & Python development.
* Transitioned from Physics, to Financial Physics and Engineering to Software Engineering professionally.
* GitHub Link: <https://github.com/Orko24>
* LinkedIn Link: <https://www.linkedin.com/in/hemanto-bairagi-865027101/>
* Portfolio Link Web: <https://orko24.github.io/react_repository/>
* Portfolio Link PDF: <https://github.com/Orko24/Portfolio_Hemanto_Bairagi>
* Specializes in Python, C/C++, Go / Golang programming languages, SQL, and Algorithm Development.

Relevant Skills

* Bachelor of Science – Hons in Physics and Astrophysics with an emphasis on Software Engineering.
* Extensive experience using LLM to rapidly design software applications like Chat GPT and Microsoft Co-Pilot.
* Extensive experience using SQL alchemy, SQLlite3, PostgreSQL, and Python to translate vast unstructured data into structured SQL databases.

### Who you are:

* + Bachelor's degree in Computer Science, Computer Engineering, relevant technical field, or equivalent practical experience.
  + Strong coding skills in Python and C/C++.
  + 2+ years of industry experience in software engineering.
  + Knowledgeable and passionate about machine learning and performance engineering.

### Nice to haves:

* + Solid fundamentals in machine learning and deep learning.
  + Solid fundamentals in operating systems, computer architecture, and parallel programming.
  + Research experience in systems or machine learning.
  + Industry experience in building enterprise-scale large distributed systems.
  + Experience with training, deploying, or optimizing the inference of LLMs in production is a plus.
  + Experience with performance modeling, profiling, debugging, and code optimization or architectural knowledge of CPU and GPU is a plus.

Experience

Scale AI: Remote Tasks. Jan 2024 to present

AI Consultant:

* The role is to design, evaluate, and ensure the quality of LLM (Large Language Model) performance.
* Skills gained and refined: Python, Golang, SQLite, PostgreSQL, Google BigQuery, Java, C++, C, JavaScript, TypeScript, React, NextJS, Dart, HTML, CSS, Prompt Engineering, LLM (Language Learning Model) & Foundation Models (Flamingo), Database Engineering, Data Engineering, Software Quality Assurance, Software Development & Testing, Machine Learning, Artificial Intelligence, ChatGPT, OpenAI, Generative AI.
* Data Engineering skills: Python, Azure Data Studio, Pandas, PostgreSQL Integration, Natural Language Analysis, JSON, PostgreSQL, Kaggle API integration, Hugging face API.
* Machine Learning skills frameworks developed and specialized in PyTorch, Keras, TensorFlow, and Spacy.
* An example project of a stock bot that uses machine learning to generate price predictions using security data is given here: <https://github.com/Orko24/Vhagar_prototype>

IBM Startup Partner Program; Adamas Audio Jan 2022 to Jan 2024

Lead Software Engineer and Software Architect:

* Role was to design, develop, produce, and deploy code for Adamas Audio. Code and software architecture was developed, implemented, and tested in a test-driven agile environment.
* Skills gained: Python, Java, Machine Learning, AI, ML Libraries (Keras, PyTorch, TensorFlow, Scikit-learn, Pandas, NumPy), API development, Frontend (HTML, CSS, JavaScript, Node.js), ETL, C++, C#, C, Golang, SQL, Site Operation Management, DNS, Domain Transfer, Site Migration, Cloud Computing (Azure, AWS, GC), Django, Flask, Redis & Celery, Linux, Bash Script, Git, GitHub, GitOps, Cryptography, SSL & Cyber Security, Data Analysis & Data Science.
* Code hosted on IBM Cloud bare metal servers, funded by IBM from May 1, 2023, to Nov 1, 2023, at $3000/month. Service discontinued due to lack of profit. Code repository: <https://github.com/Orko24/Final-Update-Adamas1>. Postproduction updates in Golang, Java, and C++ for scalability: <https://github.com/Orko24/FFMPEG_Golang_replacement>.
* Adamas Audio allowed customers to create custom audiobooks at scale: <https://www.adamasaudio.com>.
* Full article: <https://adamas-audio.medium.com/adamas-audio-machine-learning-and-web-development-to-produce-cheap-audiobooks-and-voice-cloning-a05608e4485f>.
* Developed all components (Frontend REST APIs, client data management system, Backend Data Deriving APIs, Django Middleware) in an agile Test-driven environment. Frontend in HTML, CSS, and JavaScript. Backend APIs in Python, C++, C#, C, Java, Golang, SQL. Django Middleware connected frontend and backend. Client database management also served as a data governance policy.
* Integrated data pipeline using Django Middleware enabled derived datasets and data products to be created and passed from server to client per API request.
* Built data products with ML libraries (PyTorch, TensorFlow, Keras, Scikit-learn, Pandas, NumPy). Hosted Adamas Audio with Apache, using server instance templates in C/C++: <https://github.com/Orko24/Apache_django_ssl_web_integration>.
* Integrated SSL certificates into the DNS Apache pipeline to encrypt all web traffic with HTTPS per API client request.

Quant-connect June 2020 to Jan 2022

Algorithmic Trader

* Skills gained: Python, Financial Physics, Financial Engineering, Software Development, Algorithm Development, TensorFlow, Keras, SciKit-Learn, Predictive Analytics, Lean Trading Engine.
* Transitioned from Physics to Financial Physics and Financial Engineering, gaining experience in Financial Engineering, Software Development, and Algorithm Development.
* Developed algorithms in Python using predictive analytics to identify equity price patterns based on trading sentiment and fundamentals, generating buy/sell signals. Utilized the Lean Trading Engine framework for live trading and back-testing algorithms: <https://www.lean.io/#topic100.html>.

University of Calgary Sept 2019 to June 2020

Undergraduate Researcher

* Used C++, C, Python, Mathematica, and MATLAB in a research setting to track photons from a green laser and build an ODMR. Thesis given in this GitHub repository: <https://github.com/Orko24/ODMR_thesis/blob/master/Hemanto_Bairagi_Final_Report_Draft_3%20(1).pdf>
* Link verifying research: <https://iqst.ucalgary.ca/sites/default/files/teams/1/IQSTReport20192020.pdf>
* ODMR thesis: Focused on quantum optics and quantum computing built an optically detected magnetic resonance (ODMR) microscope. Qubits were used to produce nanoscale imagery and video.

Education & Training

|  |  |
| --- | --- |
| Bachelor of Science: Astrophysics  University of Calgary  Calgary, AB  From Sept 2016 to Feb 2021   * Achieved Honors * Dean's List Honoree [2020] * GPA: 3.5/4.0 | Bachelor of Science: Physics  University of Calgary  From Sept 2016 to Feb 2021   * Achieved Honors * Dean's List Honoree [2020] * GPA: 3.5/4.0 |

RefERENCES can be provided upon request

* <https://www.linkedin.com/in/paul-barclay-648a1531/>
* <https://www.linkedin.com/in/jason-donev-76659922/>