
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, JSON NoSQL, Algorithm Development, OCR, and Generative AI.

RELEVANT SKILLS

- Bachelor of Science – Hons in Physics and Astrophysics with an emphasis on Software Engineering.
- Extensive Experience in Python 3 (all versions), OCR, scripting development, code repositories, data analysis
- Writing code, Code Repository (Git and Version Control), Loading/installing Python modules (pip and package development).
- Experience in Managing and/or working in Python virtual environments
- Demonstrated ability to write Python code that organizes datasets, sorts, compares, etc.
- Extensive experience in Data Science, (SQL tables, No SQL, JSON fields, etc.)
- Labeling/ annotating images, training models, running inferences, and Windows PowerShell scripting.
- Exposure to the Linux Command line.
- Extensive experience using LLM to design software applications like Chat GPT, Claude 3.5, and Microsoft Co-Pilot. rapidly. Extensive experience using SQL alchemy, SQLite3, PostgreSQL, and Python to translate vast unstructured data into structured SQL databases.
- Strong understanding of machine learning, artificial intelligence, and optimization techniques. Strong programming skills (i.e. Python, MATLAB, C++, and Java).
- Strong understanding of statistics and linear algebra. Creativity and ability to think outside the box.
- Ability to work well in a fast-paced environment.

RELEVANT EXPERIENCE

ICE Process Management LLC/ Bravura AI.

April 2024 to present

Software Consultant:

- Provide software consulting on design, rollout, development, and production.
- Skills: Investment Analysis, Private Equity Evaluation, software design, Investor Relations, Market Analysis, and Business Strategy. Designed investor presentations, market analysis, budget analysis, and software development process analysis.

Senior Software & Artificial Intelligence Engineer:

- The role is to design, develop, and produce the Backend for a Large Language Model that can produce AI chatbot agents from a General Knowledge Domain.
- Skills gained: SQLite, Python, NLP, Hugging Face LLMs, Lang-Chain, Chroma DB, SQL Alchemy, Web Application Design, Data Pipelines, OCR, Artificial Intelligence, Vector Databases and Embedded Vector Databases, R.A.G systems, Chatbots, Pandas, NumPy, ChatGPT, Microsoft Co-pilot, Llama3, OpenAI, Data Science & Data Engineering, Python Package Creation, Agile development, FAISS, Data Classification, Text Classification, SQL, and NoSQL, Python architecture, version control, Git, Vector Databases.
- Scope of Responsibilities included but was not limited to Software Architecture Management, Managing Junior Engineers, Python Package Development, App Development, Data Processing and Data Flow management, OCR and data quality management, Data Storage and Binary development.

- Provide software consulting on design, rollout, development, and production.
- Relevant Skills: Software Design, Software Analysis, Data Filtration, Software design and development, Snowflake, PyQT6, Data Science, PowerShell, Azure, JSON, REST APIs, FAST API, Excel, Options, and Future Analysis.
- The role is to provide software design and implement software to assist in Commodity Trading Operations.
- Developed integrated desktop and web applications with PyQT6 and Snowflake, using REST APIs (e.g., ERCOT, PJM) to streamline commodity dataflow for trading applications in power, natural gas, and oil derivatives.
- Filtered and organized weather and commodity data (ERCOT, PJM, CAISO, MISO) using Snowflake, SQL, and Pandas to create databases that generate trading insights.

Scale AI: Remote Tasks.

Jan 2024 to present

AI Consultant:

- Designed and evaluated LLM performance, gaining expertise in Python, Golang, SQLite, PostgreSQL, Google BigQuery, Java, C++, JavaScript, TypeScript, React, NextJS, Dart, HTML, CSS, and prompt engineering with foundation models like Flamingo.
- Skilled in data engineering (Python, Azure Data Studio, Pandas, PostgreSQL, JSON, Hugging Face API, Kaggle API) and database engineering.
- Machine learning specialization in PyTorch, Keras, TensorFlow, and Spacy, with experience in software quality assurance and generative AI (e.g., ChatGPT, OpenAI).

IBM Startup Partner Program; Adamas Audio

Jan 2022 to Jan 2024

Lead Software Engineer and Software Architect:

- Led development for Adamas Audio in a test-driven, agile environment, covering full-stack web development (HTML, CSS, JavaScript, Node.js) and backend APIs (Python, Java, Django, Flask) with version control through Git/GitHub.
- Gained expertise in cloud computing (Azure, AWS, Google Cloud) and hosted code on IBM Cloud bare metal servers (\$3000/month funding) until November 2023.
- Applied ML libraries (Keras, PyTorch, TensorFlow) for data analysis and data science, with experience in ETL, SQL, Redis, Celery, cryptography, and cybersecurity.
- Adamas Audio allowed customers to create custom audiobooks on a scale.
- Developed all components in a test-driven, agile environment, including frontend (HTML, CSS, JavaScript), backend APIs (Python, C++, Java, Golang, SQL), and Django Middleware to connect frontend and backend. Managed client database with integrated data governance.
- Integrated a data pipeline with Django Middleware to deliver derived datasets via API requests. Built data products using ML libraries (PyTorch, TensorFlow, Keras). Hosted Adamas Audio on Apache with SSL certificates for HTTPS encryption. Code: https://github.com/Orko24/Apache_django_ssl_web_integration

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/>
- <https://www.linkedin.com/in/brian-mcwhorter-464b532b/>