AUTHORIZED TO WORK IN DENMARK

ZACHARY SHELTON

Data Engineer | Data Scientist

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Copenhagen, Demark zshelton

Working with differnt domains and stakeholders at various technical levels is challenging, however I am ready to rise to that challenge at Demant. I am a data engineer with experience in OEM telematics,geospatial data, data streaming and API development in support of last mile delivery companies. My academic background in experimental particle physics has made me more than proficient with python, GitHub and utilizing open source solutions and libraries, I have leadership experience guiding researchers in work and presentation to stakeholders. Combined with my applied experience with PostgreSQL and cloud development solutions like Azure and Azure DevOps in an ETL environment puts me in a great position to identify business needs and learn new tools or technology that is used or will be needed in the future. I am excited join a team of like minded colleagues interested in providing great service and IT support.

WORK EXPERIENCE

Data Engineer

Uptimus ApS

Aug 2024 - Dec 2024 Copenhagen, DK

- Adapted to a dynamic startup environment, setting KPIs and developing ETL data pipelines focused towards future growth.
- Leveraged scientific Python programming to design and implement scalable systems for data intake and analysis, processing large geospatial and temporal datasets(CSV, JSON and API) for actionable insights.
- Applied machine learning techniques, statistics, and probabilities to analyze fleet vehicle data, contributing to cost-saving initiatives in last-mile delivery, used Azure and Git to maintain the API's and automatic processes required.
- Integrated multiple data streams from different API sources and built data analysis tools for integration into mobile and web applications, enhancing customer value with accessible, data-driven insights.
- Authored detailed technical reports and explored opportunities for business growth through efficient data sourcing.

Student Research Coordinator

Wolfram Research Inc.

Jan 2020 - Feb 2024 Copenhagen, DK (Remote)

- Managed and expanded the Wolfram Student Ambassador Program, mentoring ambassadors at universities worldwide and facilitating collaboration across multiple time zones.
- Advised students from diverse cultural and academic backgrounds on integrating Wolfram Language into academic projects, research initiatives, and data-driven problem-solving tasks, directly edited and contributed to academic articles and accompanying material.
- Trained students in building and debugging machine learning algorithms, developing neural networks, and performing feature extraction for research purposes.
- Explored and demonstrated Wolfram's Quantum Framework, Neural Net Library, and advanced data analysis tools to identify innovative use cases and drive adoption.
- Led creation straightforward and in depth data analysis and data visualization in academic reports meant for an international audience of scientists and professionals.

Undergraduate Research Assistant

Florida Institute of Technology

May 2016 - Dec 2019 Melbourne, United States

- Worked under Associate Professor Dr. Francisco Yumiceva, contributing to internationally recognized particle physics research projects.

CORE COMPETENCIES

Analytical Mindset | PostgreSQL | Docker | Python | Data Validation | Data Visualization | Azure | ETL Pipelines

COMPETENCIES

SCRUM & Agile Development | Software Development | CI/CD Pipelines | Database Management | Software Prototyping | Machine Learning | Web Scraping | Data Visualization | Numerical Analysis | Data Analysis | Data Lakes | Experimental Data Analysis | Project Management | Development QA | LaTeX | Experimental Design | Deep Learning | Neural Networks | Statistics

COMPUTER LANGUAGES & TECHNICAL SKILLS

Python | PyTorch | SQL | GitHub | TensorFlow | QGIS | GIS | Pandas | Seaborn | Plotly | GeoPandas | Keras | XgBoost | scikit | Wolfram Language | HTML | Git CL/Desktop | Microsoft Excel, Word, PowerPoint | C++ | FDTD Simulation | ROOT7

PROFESSIONAL INTERESTS

Data Science | Artificial Intelligence | Green Energy | GIS | Climate Science | DevOps | Neural Networks | AI

- Designed Printed Circuit Boards (PCBs) using Eagle CAD for calibration of QIE charge injectors, simulating calorimeter responses for use in particle physics labs such as FermiLab and the CMS detector at CERN.
- Collaborated with a multinational team for three months at FermiLab, testing and troubleshooting CMS equipment to ensure operational accuracy and reliability.
- Maintained and improved the team's Python software base while on-site at FermiLab, enhancing analysis efficiency and tool reliability.
- Utilized ROOT7 analysis framework and Python to process and analyze CERN Analysis Object Data (AOD), deriving insights critical to experimental validation.

EDUCATION

MSc in Earth and Space Physics and Engineering

Technical University of Denmark

September 2025 - June 2027 | Kgs. Lyngby, Denmark

MSc Physics, Focus Area High Energy Physics

Florida Institute of Technology

January 2020 - December 2021 | Melbourne, United States

Using Machine Learning to identify Top Quarks in CMS (February 2021 - September 2021)

- Developed algorithms using the XGBoost Python library to identify and classify top quark pairs via their hadronic decay jets' charge and geometric features.
- Compared geometric and spatial orientation of 3 or more jets to identify most likely trio quarks from a hadronic top decay.
- Determined that boosted decision trees combined with data regression methods would be the most effective method for diverse datasets.
- Collaborated with peers from the University of Ohio to refine machine learning methodologies, integrating academic and applied approaches

BSc Physics

Florida Institute of Technology

August 2015 - December 2019 | Melbourne, United States

Educational Cosmic Muon Detector - BSc Thesis (January 2019 - December 2019)

- Conducted spectrum analysis of scintillating materials sourced from FermiLab, evaluating their potential in educational applications.
- Assembled and tested a simple cosmic ray detector for use in undergraduate modern physics courses made from a recycled scintillator.
- Developed and presented lesson plans and lab materials aimed at introducing complex particle physics concepts to undergraduate and advanced high school students.
- Presented findings at the Northrop Grumman Engineering and Science Fair, showcasing the intersection of research and education.

BSc STEM Education

Florida Institute of Technology

August 2015 - December 2019 | Melbourne, United States

Particle Physics | Experimental Physics

REFERENCES

References availible on request.

LANGUAGES

English(Native Speaker)

Danish (Intermediate Proficiency)

HOBBIES AND INTERESTS

Snowboarding | Hiking | Camping | Gaming