

Uladzimir Charniauski

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Education

University of Connecticut

BA in Applied Mathematics, BA in Statistics, Minors in CS & Economics

Aug 2022 – Dec 2025

- GPA: 3.83/4.0

- **Academics:** Reinforcement Learning, Deep Learning, Bayesian Machine Learning, Machine Learning for Physical Sciences (SciML), Artificial Intelligence, Time Series Foundation Models, Data Analysis & Manipulation with Python, Data Structures, Statistical Computing (R), Probability, Time Series Analysis, Linear Algebra, Numerical Analysis (MATLAB).

Experience

NSF REF Undergraduate Researcher

University of Connecticut

Storrs, CT

Sep 2025 – Present

- Led the development and implementation of Transformers-based **Time Series Forecasting Models (TSFMs)** through bringing architectural innovations to latest TSFM SOTA baselines.
- Processed, cleaned, and engineered features from large-scale time series datasets, leveraging statistical methods and domain-specific transformations to improve model robustness.
- Collaborated with faculty and graduate researchers to document findings, visualize results, and prepare materials for manuscript writings and conference presentations

AI Algorithm Engineer Intern

Liba Space

Remote, United States

Sep 2025 – Present

- Developed cutting-edge AI algorithms to enhance career training and recruitment platforms.
- Optimized machine learning models and large language models (LLMs) for improved performance, scalability, and efficiency.
- Collaborated with cross-functional teams (product and engineering) to seamlessly integrate AI into core platform features.

ML Engineering Intern - AI Platform

The Hartford

Hartford, CT

May 2025 – Aug 2025

- Built a **Streamlit**-based tool integrating **AWS Bedrock LLMs** to generate automated PowerPoint decks from enterprise chatbot output (HartAI), reducing manual effort by 80%.
- Managed end-to-end model deployment workflows using **MLflow**, including experiment tracking, model versioning, and production deployment to ensure reliable and scalable AI solutions
- Leveraged **Git** for robust version control, code reviews, and collaborative development within a cross-functional engineering team

Statistical Analyst Intern

Valos

Boston, MA

Jun 2024 – Aug 2024

- Developed R programs using the **Tidyverse** suite to perform data manipulation, statistical analysis, and data visualization for actionable insights
- Compiled analytical results into technical reports and presented key findings to internal management to support data-driven decision-making
- Created and maintained comprehensive documentation of data sources, workflows, and code to ensure full reproducibility and transparency

Projects

Memory-Augmented Variational RNN

Sep 2025 - Present

- Designed a novel **Memory-Augmented Variational RNN (MVRNN)** to improve long-memory extrac-

tion in time series data with present high variability

- Implemented MVRNN against existing recurrent neural network baselines designed for handling data with long-range dependencies
- Conducted numerical experiments on real-world Time Series data with persistent long-range dependencies and demonstrated the advantages of a variational memory-augmented network in terms of **RMSE** and **MAE** metrics

Time Series RAG X (TS-RAGX)

May 2025 - Present

- Enhanced the architecture of an existing **TS-RAG** (Time Series Retrieval-Augmented Generation) mechanism by integrating a random sampling component to diversify retrieved context windows and improve forecasting robustness
- Conducted extensive experimental evaluations of **Chronos-Bolt**, **Panda** and **ToTo** TSFMs, benchmarking their predictive accuracy, runtime performance, and scalability on large-scale temporal datasets
- Developed automated workflows to streamline hyperparameter tuning and model evaluation processes, accelerating experimentation cycles and improving reproducibility

Filter Bank-Embedded MRNN and MLSTM — [GitHub](#)

Feb 2025 - Apr 2025

- Developed **Filter Bank-Embedded Memory-Augmented RNN (F-MRNN)** and **LSTM (F-MLSTM)** architectures to enhance long-memory extraction in time series data using learnable memory parameters
- Integrated a custom-designed filter bank into **MRNN** and **MLSTM** frameworks, enabling the models to approximate fractional differencing with multiple filters capturing diverse frequency components
- Conducted numerical experiments on real-world Time Series data with persistent long-range dependencies and demonstrated the advantages of filter-banked memory-augmented architectures in terms of **RMSE** and **MAE** metrics

Publications

Long-Memory AutoRegressive Bandits.

May 2025

In Submission, *Uladzimir Charniauski*, Yao Zheng

On the Anomaly Detection in Time Series Data with Kernel PCA

April 2025

UConn Journal of UConn STAT Student Seminars, *Uladzimir Charniauski*

Autoregressive Bandits in Near-Unstable or Unstable Environment.

Sep 2024

American Journal of Undergraduate Research, *Uladzimir Charniauski*, Yao Zheng
[10.33697/ajur.2024.116](https://doi.org/10.33697/ajur.2024.116)

Skills and Technologies

Languages & Libraries: Python, R, MATLAB, SAS, SQL, Tidyverse, NumPy, Pandas, Scikit-learn, PyTorch, TensorFlow, Matplotlib, Tikzplotlib, Streamlit, python-pptx, LlamaIndex

Technologies: Git, GitHub, AWS Cloud Services, Snowflake, MLflow, Jupyter Notebooks

Frameworks & Techniques: LangChains, ReAct AI Agents, Statistical Modeling and Forecasting, Machine Learning, Data Visualization, Data Engineering, Prompt Engineering

Awards and Honors

- **National Honorary Mathematics Society, Pi Mu Epsilon**, University of Connecticut
- **2023 & 2024 New England Scholar**, University of Connecticut
- **Spring 2024 & Fall 2024 Dean's List**, University of Connecticut

Certificates

- **SQL (Advanced) Certificate**, HackerRank
- **Citi - Markets Quantitative Analysis (MQA) Job Simulation**, Forage