ALYSSA MECZKOWSKA

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EDUCATION

St. John's University **Queens, NY**
Computer Science, B.S. *August 2023 – May 2026*

- **GPA:** 4.0
- **Relevant Coursework:** Software Engineering, Database Management Systems, Operating Systems, Data Structures
- **Awards & Honors:** Provost Scholarship (Aug 2023), CBL Research Award (May 2025), CCPS Honor Society (Oct 2025)

PROFESSIONAL EXPERIENCE

IBM Thomas J. Watson Research Center **Yorktown Heights, NY**
Research Software Contributor *November 2025 – Present*

- Selected to work with IBM engineers on active development of the OSCAL Compass compliance automation toolkit
- Implemented bug fixes, schema improvements, and documentation updates across multiple GitHub issues

MediCaddie Technologies **Queens, NY**
Machine Learning Engineer *November 2025 – Present*

- Design and train ICD-10 and CPT prediction models using transformer-based embeddings, TF-IDF features, and structured EHR signals to automate clinical coding with high precision
- Build an end-to-end machine learning pipelines integrated directly into the platform's coding workflow

Software Engineer *August 2025 – November 2025*

- Led full-stack development of a clinician-facing dashboard using React, Node.js, GraphQL, and SQL
- Built scalable backend infrastructure to support data ingestion, document storage, and clinician-review workflows

Daisy Property Management **New York, NY**
Automation Engineering Intern *May 2025 – August 2025*

- Built 3 workflow automations, processing 5K+ documents in testing and development, reducing processing time by 95%
- Increased accuracy of payroll and mortgage ops by eliminating recurring manual errors across finance workflows

RESEARCH EXPERIENCE

Collins College of Professional Studies **Queens, NY**
Quantum Machine Learning Research Assistant *May 2025 – Present*

- Design quantum-enhanced anomaly detection methods for vehicular network handshakes by developing quantum kernels
- Evaluate accuracy, robustness, and margin separation to assess conditions where quantum kernels provide advantages over classical kernels in small, correlated datasets

Bukhari Lab **Queens, NY**
Machine Learning Research Assistant *April 2025 – Present*

- Design and implement end-to-end NLP pipelines for 10K MIMIC-IV clinical notes
- Fine-tuned and evaluated BioBERT, achieving an F1 score of 0.84 for clinician burnout detection

Vázquez Group **Queens, NY**
Machine Learning Research Assistant *March 2025 – Present*

- Co-lead development of predictive machine learning framework for keto–enol tautomerization
- Built and optimized Random Forest models ($R^2 = 0.71$), identifying key features influencing tautomeric equilibria

PUBLICATIONS AND PRESENTATIONS

Publications

- Bukhari, S. A. C., Keshtkar, F., & Meczkowska, A. (2025). *A Narrative-Driven Computational Framework for Clinician Burnout Surveillance.* Accepted at IEEE International Conference on Machine Learning and Applications (ICMLA 2025).

Presentations

- Meczkowska, A., Vendome, A., Lindberg, G. E., & Vázquez, F. X. (2025, Sept 3). *A Machine Learning Framework for Predicting Keto–Enol Tautomerization Equilibria from Computed Molecular Descriptors.* Poster presented at St. John's University, Queens, NY.
- Meczkowska, A., Vendome, A., Lindberg, G. E., & Vázquez, F. X. (2025, July 4). *The Utilization of Machine Learning Models for Predicting Significant Factors of Keto-Enol Tautomerization*. Poster presented at the MERCURY Conference, University of Pittsburgh, Pittsburgh, PA.

LEADERSHIP AND ACTIVITIES

- Lead Organizer, Google Developer Group *(November 2025 – Present)*
- Red Team Competitor, STJ CyberStorm *(October 2025 – Present)*
- Volunteer, Code Path *(October 2025)*
- Board Member, Student Technology Governance Group *(October 2024 – Present)*

TECHNICAL SKILLS

Programming: Python, Java, C/C++, SQL, JavaScript/TypeScript
ML/AI: PyTorch, TensorFlow, scikit-learn, BioBERT, HuggingFace, spaCy, Psi4, RDKit
Quantum Computing: Qiskit, PennyLane, quantum kernel methods, QSVM
Tools: Git/GitHub, Docker, PostgreSQL, Kali Linux, Jupyter Lab, Google Colab