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Lukas Talaga

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Chicago, IL

Education

University of Colorado Boulder — Jan 2024 – May 2025
Expected B.S. in Applied Computer Science | GPA: 4.0 — *Online*

University of Illinois Urbana-Champaign — Aug 2016 – May 2020
B.S. in Molecular & Cellular Biology | Chemistry Minor | GPA: 3.7 — *Urbana, IL*

- **Achievements**: High Distinction in Research, Cell & Developmental Biology Certificate, Senior Thesis

Projects

- **Deep Learning for Protein Secondary Structure Prediction**: Developed and fine-tuned RNN and CNN architectures using TensorFlow/Keras to predict protein secondary structure from amino acid sequences.
- **Unsupervised Learning for Forest Cover Classification**: Applied PCA to reduce dimensionality on the UCI Covertype dataset and employed K-Means and Hierarchical clustering to uncover distinct forest cover types.
- **Supervised Learning for Video Game Match Outcomes**: Designed a machine learning framework employing logistic regression, decision trees, and ensemble methods to predict League of Legends match outcomes based on first-10-minute game data.
- **RSA Cryptosystem: Implementation and Security Analysis**: Implemented an RSA cryptosystem in Python by coding prime generation, modular inverse, and fast modular exponentiation. Validated the implementation through a live encrypted message exchange.

Work Experience

AbbVie — Nov 2020 – Mar 2023
Associate Scientist — *North Chicago, IL*

- Executed high-throughput screening initiatives to support drug discovery pipelines and optimized assay conditions for automated testing in 384-well format using robotics, liquid handlers, and plate readers.
- Delivered high-quality structure-activity relationship and molecular characterization support across diverse therapeutic areas.
- Led initiatives in developing sensitive biochemical, biophysical, and cell-based assay conditions utilizing systematic experimental design to improve throughput, efficiency, accuracy, and precision.
- Conducted in-depth data analysis and visualization using GraphPad Prism, TIBCO Spotfire, and Excel; extracted insights from datasets with millions of entries to guide project decisions.
- Orchestrated project communications across multidisciplinary teams, aligning strategies and driving key milestones.

Research

Blanke Lab (Microbiology BSL-2) — Sep 2018 – May 2020
Undergraduate Research Assistant — *Urbana, IL*

- Conducted rigorous experimentation and developed novel assays to investigate the *Acanthamoeba castellanii*-mediated internalization, relocation, escape, and amplification of *Bacillus anthracis* in soil environments.
- Crafted comprehensive research protocols comparing *Bacillus anthracis* interactions between human alveolar macrophages and soil amoebae, enhancing the understanding of virulence mechanism evolution through Anthrax disease origins.
- Presented at three undergraduate research symposiums and was awarded the James R. Beck Microbiology Scholarship.

Nutrition and Exercise Performance Research Group — Jan 2017 – Sep 2018
Undergraduate Research Assistant — *Urbana, IL*

- Studied the effects of various nutrition protocols on human participants, with a focus on muscle protein synthesis following supplemental protein, whole food protein, and varied macronutrient ratios.
- Performed biological and chemical manipulations on human tissue (Western Blot, ELISA, muscle processing, absorbance analysis, amino acid labeling) and analyzed output data.
- Developed and implemented structured exercise and nutrition protocols; assisted during muscle biopsies and blood drawing.

Skills

Languages: Python, SQL, C++, C, Java, LaTeX, Scala

Technologies: Git, Pandas, NumPy, Matplotlib, Jupyter Notebook, SciPy, scikit-learn, TensorFlow, MySQL Workbench, Tableau, PowerBI, GraphPad Prism, TIBCO Spotfire, Excel