Lukas Talaga

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EDUCATION

University of Colorado Boulder Jan 2024 – May 2025

Bachelor of Science in Applied Computer Science | GPA: 4.0

Specialized Coursework: Machine Learning, Data Science, Databases, Info Visualization, Software Dev

University of Illinois Urbana-Champaign Aug 2016 – May 2020

Bachelor of Science in Molecular and Cellular Biology | Minor in Chemistry | GPA: 3.7

Achievements: High Distinction, Cell & Developmental Biology Certificate, Senior Thesis

SKILLS

Languages: Python | SQL | R | Java | Scala | C/C++ | Bash | JavaScript | LaTeX

Libraries: NumPy | Pandas | scikit-learn | XGBoost | TensorFlow | Keras | Matplotlib | Flask | pytest

Tools: Docker | Git | Jupyter | Colab | Excel | Power BI | Tableau | Linux/Unix | REST APIs | Agile

Databases: PostgreSQL | MySQL | MongoDB

WORK EXPERIENCE

AbbVie Nov 2020 – Mar 2023

Associate Scientist (High-Throughput Screening and Molecular Characterization) *North Chicago, IL*

- Developed comprehensive data analysis and visualization workflows using GraphPad Prism, TIBCO Spotfire, Dotmatics, and Excel to extract actionable insights from multimodal, real-world biochemical datasets and drive informed project decisions.
- Coordinated cross-functional communications across multidisciplinary teams to align strategies and drive key milestones.
- Led high-throughput screening initiatives that advanced drug discovery by refining assay conditions for automated testing while leveraging robotic platforms, automated liquid handlers, multimodal plate readers, and high-content microscopy systems.
- Directed initiatives to develop highly sensitive biochemical, biophysical, and cell-based assays while employing systematic experimental design to enhance throughput, efficiency, accuracy, and precision.
- Provided robust structure-activity relationship analysis and molecular characterization support across multiple therapeutic areas, informing targeted drug design and strategic research decisions.

PROJECTS

Protein Secondary Structure Prediction

- Engineered deep learning models (Dense, CNN, LSTM, GRU) in TensorFlow/Keras to predict protein secondary structures from amino acid sequences. Optimized performance with custom sequence encoding, padding, and loss functions.

Uncovering Hidden Patterns in Forest Cover Data

- Applied PCA and clustering (K-Means, Hierarchical) to reveal latent structures in forest cover data and refine type classification. Validated cluster outcomes using conventional metrics.

Predicting League of Legends Game Outcomes

- Developed predictive models (logistic regression, KNN, decision tree, random forest, gradient boosting, SVM) to predict match outcomes using early-game data from ranked League of Legends matches.

RESEARCH

Blanke Lab (Microbiology BSL-2) Sep 2018 – May 2020

Undergraduate Research Assistant *Urbana, IL*

- Conducted rigorous experimentation and developed novel assays to study how *Acanthamoeba castellanii* influences the internalization, relocation, escape, and amplification of *Bacillus anthracis* in soil environments.
- Developed comprehensive research protocols to compare *Bacillus anthracis* interactions with human alveolar macrophages and soil amoebae, deepening the understanding of virulence mechanism evolution in Anthrax disease.
- Presented research findings at three symposiums and received the James R. Beck Microbiology Scholarship.

Nutrition and Exercise Performance Research Group Jan 2017 – Sep 2018

Undergraduate Research Assistant *Urbana, IL*

- Investigated the impact of diverse nutrition protocols on muscle protein synthesis in human participants, emphasizing the roles of supplemental protein, whole food protein, and varying macronutrient ratios.
- Performed advanced biological and chemical assays on human tissue samples and conducted comprehensive data analysis.
- Implemented structured exercise and nutrition protocols while assisting with muscle biopsies and blood sampling.