Maciej Wiatrak

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EDUCATION

University of Cambridge — **Cambridge, UK**
PhD in Machine Learning for Biology, Cambridge Centre for AI in Medicine. 10/2022 – 10/2026

- Developing machine learning methods for genomics. Focus on deep learning, graph methods, data integration and explainability.
- Supervisors: **Dr Sarah Teichmann, Prof. Andres Floto, Prof. Mihaela van der Schaar**.

University College London — **London, UK**
Undergraduate, BASc Science & Engineering; Major: Computer Science, Minor: Mathematics. 09/2016 – 05/2019

- **1st class honours with distinction** (Dean's List, top 5% of the students).
- Undergraduate topic thesis: "Governing the Commons with Multi-Agent Reinforcement Learning". Advisors: **Prof. Jun Wang**, **Dr Manuela Dal Borgo**.

EXPERIENCE

BenevolentAI (AI for Drug Discovery) — **London, UK**
Machine Learning Engineer 12/2019 – Present

- Working on target identification and knowledge discovery to predict and validate the most biologically relevant, progressible target hypotheses for drug development.
- Squad lead for applied research team working on data integration using deep learning.
- Successfully led NLP research project which developed a state-of-the-art entity linking system for biomedical entities.
- Worked on a novel model for identifying target genes for various diseases and biological mechanisms.
- Proposed and led a project on building a method for providing case-based explainable output from a machine learning model.
- Worked on large distributed systems for fast and efficient data preprocessing.
- Co-authored 5 papers on graph models and NLP as well as 2 patents.

University of Edinburgh — **Edinburgh, UK**
Research Intern, Autonomous Agents Research Group, School of Informatics 09/2019 – 11/2019

- Working on stabilizing Generative Adversarial Networks (GANs) through the application of multi-agent reinforcement learning.
- Independently written a comprehensive report on the state of Generative Adversarial Network training stabilization.
- Supervised by **Dr Stefano V. Albrecht**, Head of the Autonomous Agents Research Group.

PUBLICATIONS & MANUSCRIPTS

- **Pseudo-Riemannian Embedding Models for Multi-Relational Graph Representations.** Saee Paliwal, Angus Brayne, Maciej Wiatrak, Benedek Fabian, Aaron Sim. Accepted to AKBC 2022.
- **On Masked Language Models for Contextual Link Prediction.** Angus Brayne, Maciej Wiatrak, Dane Corneil. In ACL, DeeLIO workshop, 2022.
- **Directed Graph Embeddings in Pseudo-Riemannian Manifolds.** Aaron Sim, Maciej Wiatrak, Angus Brayne, Saee Paliwal, Paidi Creed. In International Conference on Machine Learning (ICML), 2021.
- **Simple Hierarchical Multi-Task Neural End-To-End Entity Linking for Biomedical Text.** Maciej Wiatrak and Juha Iso-Sipila. In EMNLP, LOUHI (Health text) workshop, 2020.
- **Stabilizing Generative Adversarial Networks: A Survey.** Maciej Wiatrak and Stefano V. Albrecht. *arXiv: 1910.00927 [cs],* 2019.

HONORS & AWARDS

- **Dean's List** (merit-based, awarded to top 5% of the students); University College London. June 2019.
- **Best Talk – People's choice award.** Science Polish Perspectives (SPP) conference. University of Cambridge. November 2019.
- **Distinction (Prize of the Jury).** BASc End of the Year conference. University College London. June 2017.
- **Provost's Scholarship** (merit-based, top 5% of the admitted students). Warsaw School of Economics. January 2016.
- **National Bank of Poland Scholarship** for outstanding academic performance (top 1%). September 2015.
- **Geography Olympian** (top 1% of students worldwide), awarded twice. April 2015, April 2014.

EXTRACURRICULAR, VOLUNTEERING & TEACHING EXPERIENCE

University College London **London, UK**

Undergraduate Teaching Support (Game Theory) 01/2019 – 05/2019

- Providing support to undergraduate students in game theory class.
- Supervised by **Dr Manuela Dal Borgo.**

Applied Quantitative Methods Society **London, UK**

Co-Founder & Vice President, University College London Union 10/2018 – 06/2019

- Established society aiming at promoting and helping non-quantitative degrees students in using computer science tools.

Project Access (NGO) **London, UK**

Mentor (STEM degrees) 02/2018 - Present

- Successfully supported 5 students throughout the admission process to computer science and mathematics degrees.

Other: UCL Artificial Intelligence Society; Graduate of Music School; Boston Consulting Group Star League

SKILLS, LANGUAGES, & INTERESTS

Programming languages: Python (advanced), Java, SQL.
Frameworks: PyTorch (advanced), Spark (advanced), scikit-learn, Spacy, AWS, k8s, flair.
Skills: deep learning, molecular biology, drug target identification, data integration, NLP, language models, distributed systems, graph learning, self-supervised learning.
Languages: English (fluent), German (intermediate), France (intermediate), Polish (native).
Sports: alpinism (certified winter mountain climber), mountaineering, cycling, football, volleyball.
Music: 4-year music school graduate (guitar), Jazz, Blues.