KASIA KEDZIERSKA

I'm an AI research scientist working at the intersection of computational biology and machine learning. My work includes developing methods for analyzing complex biological data, with a focus on single-cell and cancer biology. At Microsoft Research, I evaluated Foundation Models for single-cell applications; at the Allen Institute, I'm developing biologically grounded AI models in collaboration with scientists across research units. I'm especially interested in creating tools and models that support real-world applications in biology and healthcare.

SELECTED WORK EXPERIENCE

Dec 2024 • present
AI Research Scientist @ Allen Institute, Seattle, Washington, USA
I'm building **AI models** designed to reflect real **biological complexity**, working with experimental scientists to address questions across neuroscience, cell biology, and beyond.

Jan 2024 • Nov 2024
Deep Learning Researcher @ DeepLife, Remote
I led an R&D project on Foundation Models in biology. I **mentored** and supervised **Master's student** through successful thesis defense.

Oct 2018 • May 2024
DPhil Researcher @ Wellcome Centre for Human Genetics, Big Data Institute, University of Oxford, UK
In my PhD project I looked at how **chromatin organization** influences **disease initiation and progression** in uterine cancer using multimodal data. I was also working on building and refining ML models of **cancer evolution**, specifically identyfing evolutionary trajectories in the cancer of the uterus.

May 2023 • Aug 2023
Intern @ Microsoft Research New England, Cambridge, Massachusetts, USA

Jul 2021 • Oct 2021
Intern @ Novo Nordisk Research Centre Oxford, Oxford, United Kingdom

EDUCATION

2024 | 2018
DPhil in Genomic Medicine and Statistics @ Nuffield Department of Medicine, Brasenose College, University of Oxford
Fully funded by the Wellcome Trust Four-year PhD Studentships in Science

2018 | 2015
M. Sc. Eng., Biotechnology @ Warsaw University of Technology
Master thesis *Analysis of the mutational burden across gene sets in cancer* awarded the title of **The Best Master Thesis in Bioinformatics** defended in 2018.

SELECTED CONFERENCE PRESENTATIONS

2024
AI in Single-Cell Biology Workshop @ Chan Zuckerberg Initiative, Redwood City, CA, USA

2023
Chromatin modfiers in endometrial cancer, Poster @ Biology of Genomes 2023, Cold Spring Harbor, NY, USA

2022
Systematic characterisation of chromatin modifiers in endometrial cancer, Poster @ EACR 2022 Congress, Seville, Spain

2019
Invited talk**: Analysis of the mutational burden across gene sets in cancer @ Polish Bioinformatics Society Symposium, Cracow, Poland**

SELECTED AWARDS AND HONORS

2023
JXTX + CSHL 2023 Biology of Genomes Scholarship @ JXTX Foundation, Cold Spring Harbor Laboratory
Awarded to outstanding graduate students in genomics and data sciences.

2022
Graduate Prize in the 'Outstanding work outside degree' category @ Nuffield Department of Medicine, University of Oxford
Each year Nuffield Department of Medicine, based on nominations, awards selected PhD students based on their performance within and outside of their degree.

2023 | 2021
Senior Hulme Scholarship @ Brasenose College, University of Oxford
Senior Hulme Scholarship is awarded by Brasenose College, University of Oxford to DPhil students whose academic performance is deemed to be exceptional.

View this Resume online
kasia.codes/resume/

CONTACT

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CODING SKILLS

- Python
- R
- Bash
- AWK
- Perl

Python:
`PyTorch`, `Lightning`, `Tensorflow`, `keras`, `scverse/scanpy`, `scikit-learn`, `NumPy`, `Pandas`, `Seaborn`, `matplotlib` and more

R:
`tidyverse`, `data.table`, `Shiny`, `plotly`, `tidymodels`, `caret` and others

Cloud Computing/HPC:
`SLURM`, `SGE`, `GCP`, `AWS`, `Scaleway`, `Microsoft Azure`, `Azure Blob Storage`, `AWS Cloud Storage` and more

LANGUAGES

- **Polish** (native)
- **English** (full professional)
- **French** (conversational)
- **Estonian** (beginner)

CV source code. Made with pagedown, based on nstrayer/cv.
Last updated on 2025-05-13.

SELECTED PUBLICATIONS

Full list of publication is available through my Google Scholar profile scholar.google.com/citations?user=Yv6poTwAAAAJ.

2025 **Zero-shot evaluation reveals limitations of single-cell foundation models @ Genome Biology**
K. Z. Kedzierska, L. Crawford, A. P. Amini, A. X. Lu

2023 **Assessing the limits of zero-shot foundation models in single-cell biology @ bioRxiv**
K. Z. Kedzierska, L. Crawford, A. P. Amini, A. X. Lu ✨ **This work was featured in The New York Times**✨

2023 **Data Study Group Final Report: CEFAS - Automated identification of sea pens using OpenCV and machine learning @ Zenodo**
In alphabetical order: M. Asthana, R. Blackwell, S. Davis, A. Downie, J. Forsyth, **K. Kedzierska**, R. Mestre, Z. Reza, J. Ribeiro, P. Palola, Y. Said

2023 **Functional analysis reveals driver cooperativity and novel mechanisms in endometrial carcinogenesis @ EMBO Molecular Medicine**
M. Brown, A. Leon, **K. Kedzierska**, C. Moore, H. L. Belnoue-Davis, S. Flach, J. P. Lydon, F. J. DeMayo, A. Lewis, T. Bosse, I. Tomlinson, D. N. Church

2020 **Prognostic integrated image-based immune and molecular profiling in early-stage Endometrial Cancer @ Cancer Immunology Research**
N. Horeweg, M. de Bruyn, R. A. Nout, E. Stelloo, **K. Kedzierska**, A. León-Castillo, A. Plat, K. D. Mertz, M. Osse, I. M. Jürgenliemk-Schulz, L. C.H.W. Lutgens, J. J. Jobsen, E. M. van der Steen-Banasik, V. T. Smit, C. L. Creutzberg, T. Bosse, H. W. Nijman, V. H. Koelzer and D. N. Church

2019 **Dynamics of cardiomyocyte transcriptome and chromatin landscape demarcates key events of heart development @ Genome Research**
M. Pawlak, **K. Z. Kedzierska**, M. Migdal, K. A. Nahia, J. A. Ramilowski, L. Bugajski, K. Hashimoto, A. Marconi, K. Piwocka, P. Carninci and C. L. Winata

2018 **SONiCS: PCR stutter noise correction in genome-scale microsatellites @ Bioinformatics**
K. Z. Kedzierska, L. Gerber, D. Cagnazzi, M. Krützen, A. Ratan, L. Kistler

SUMMER SCHOOLS & HACKATHONS

2022 **Sea pen identification from video footage, Turing Data Study Group @ Alan Turing Institute, London, UK**

2019 **Machine Learning Summer School @ Imperial College London, University College London, London, UK**

SELECTED TEACHING EXPERIENCE

2022 **Unsupervised learning @ NGSchool2022: Machine Learning in Computational Biology, Jablonna, Poland**
I co-led, with Kaspar Märtens, lecture and tutorial sessions on unsupervised learning and its use cases in computational biology. All materials are availble at github.com/kzkedzierska/ngs22_unsupervised.

2021 **Data visualization in bioinformatics - hackathon mentor @ Online hackathon NGSprint, Discord**
I led the hackathon in data viusalisation with emphasis on computational biology. Teaching materials are available at github.com/kzkedzierska/NGSprint_data_viz.

2020 **Online tutorials: Python for Data Science and Introduction to Python @ NGSeminars, YouTube**
I led two Python tutorials: **Introduction to Python** kasia.codes/talk/intro_to_python/ and **Python for Data Science** kasia.codes/talk/py4ds/.

2019 **Introduction to Managing Code with Git, Introduction to R @ Wellcome Centre for Human Genetics, Oxford, UK**
Led an 8-week course on R covering data manipulation, visualization, and RNA-seq analysis. Also delivered a 2-hour introductory Git workshop, with materials available at kasia.codes/talk/into_to_git/.

SELECTED GRANTS

2022 | 2020 **Visegrad Grant to organise NGSchool2022 @ Visegrad Fund**
32,190 EUR awarded towards organising affordable training and conference focusing on ML application in Computational Biology. During this project I managed an international team of volunteers and led the organisation of summer school, conference, online seminars and hackathon.

2023 | 2018 **Scientific grant as part of Wellcome Trust funded DPhil @ Wellcome Trust**
30,000 GBP towards research expenses for the PhD project which allowed me to design and led pilot experiments, managing the grant for successful execution of research objectives.