KASIA KEDZIERSKA

I am a PhD student at the University of Oxford. As a computational biologist, I use **Data Science** and **Machine Learning** to answer biological questions. Specifically, I study cancer of the uterus and chromatin organisation in disease progression. Last summer, I joined Computational Biology Department at Novo Nordisk Research Centre in Oxford as an intern, where I was working with NLP methods and knowledge graphs. Currently, I am looking into adapting my experience from the internship to build models for investigating cancer evolution.

SELECTED RESEARCH EXPERIENCE

2021

Intern

Novo Nordisk Research Centre Oxford — Oxford, United Kingdom

- I used NLP based methods to screen biomedical articles and identify potential therapeutic targets. I built R Shiny App to allow colleagues within the company to investigate results from our pipeline.

present | 2018

DPhil Candidate

Wellcome Centre for Human Genetics, Big Data Institute — University of Oxford, UK

- In my PhD project *Functional and evolutionary characterisation of chromatin organisation in endometrial cancer* I am looking at how chromatin organisation influences disease progression in cancer of the uterus.
- Mentored by D. Church and D. Woodcock
- Currently I'm working on building and refining ML models of cancer evolution.

2018 | 2017

Visiting Graduate Student

Ratan group — University of Virginia, USA

- Developed SONiCS - a tool for genotyping short tandem repeats (STRs) profiled using capture assays.
- Worked on the Master thesis - *Analysis of the mutational burden across gene sets in cancer*.

EDUCATION

present | 2018

DPhil. Candidate, Genomic Medicine and Statistics

Nuffield Department of Medicine, Brasenose College — University of Oxford, UK

- PhD fully funded by Wellcome Trust Four-year PhD Studentships in Science

2018 | 2015

M. Sc. Eng., Biotechnology

Warsaw University of Technology — Warsaw, Poland

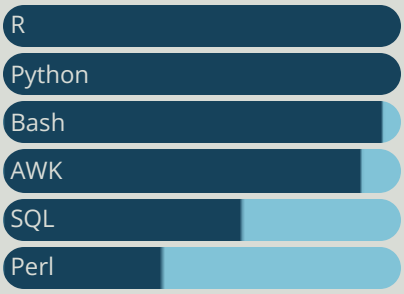
- Master thesis: - *Analysis of the mutational burden across gene sets in cancer* awarded the title of **The Best Master Thesis in Bioinformatics** defended in 2018.

View this Resume online
kasia.codes/resume/

CONTACT

kasia@well.ox.ac.uk
kzkedzierska
github.com/kzkedzierska
kasia.codes
kzkedzierska

CODING SKILLS



R: `tidyverse`, `data.table`, `Shiny`, `plotly`, `tidymodels`, `caret` and others
Python: `NumPy`, `Pandas`, `SciPy`, `scikit-learn`, `keras`, `PyTorch`, `Seaborn`, `matplotlib` and more

LANGUAGES

*Made with the R package **pagedown**.*

Based on the Nick Strayer's CV package; modified source code for this CV is available here.

Last updated on 2022-11-25.

SELECTED PUBLICATIONS

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

2021 — **Multi-omics analyses of early liver injury reveals cell-type-specific transcriptional and epigenomic shift**
M. Migdal, E. Tralle, K. A. Nahia, L. Bugajski, **K. Z. Kedzierska**, F. Garbicz, K. Piwocka, C. L. Winata, M. Pawlak
BMC Genomics

2020 — **The *MLH1* polymorphism rs1800734 and risk of endometrial cancer with microsatellite instability**
H. Russell, **K. Kedzierska**, D. D. Buchanan, R. Thomas, E. Tham, M. Mints, A. Keränen, G. G. Giles, M. C. Southey, R. L. Milne, I. Tomlinson, D. Church, A. B. Spurdle, T. A. O'Mara and A. Lewis
Clinical Epigenetics

2019 — **Dynamics of cardiomyocyte transcriptome and chromatin landscape demarcates key events of heart development**
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
Genome Research

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

SELECTED TALKS AND POSTERS

2022 — **Systematic characterisation of chromatin modifiers in endometrial cancer**
European Association for Cancer Research 2022 Congress
Seville, Spain
• Poster presentation

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

2018 — **Differential mutation analysis across gene sets in cancers**
Biology of Genomes 2018
Cold Spring Harbor, NY, USA
• Poster

SELECTED AWARDS AND HONOURS

present | 2021 — **Senior Hulme Scholarship**
Brasenose College, University of Oxford
Oxford, UK
• Senior Hulme Scholarship is awarded by Brasenose College, University of Oxford to DPhil students whose academic performance is deemed to be exceptional.

2022 | 2021 — **Graduate Prize in the 'Outstanding work outside degree' category**
Nuffield Department of Medicine, University of Oxford
Oxford, UK
• Each year Nuffield Department of Medicine, based on nominations, awards selected PhD students based on their performance within and outside of their degree.

ATTENDED WORKSHOPS, SUMMER SCHOOLS

2019

Machine Learning Summer School

Imperial College London, University College London

London, United Kingdom

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. Under my supervision, 3 teams of around 5 people each, created interactive and captivating visualisation. 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 R

Wellcome Centre for Human Genetics

Oxford, United Kingdom

- 8 week course in Introduction to R, Data Manipulation, Data Visualisation and RNA-seq data analysis.
- Materials available on github/kzkedziersa/r_intro

2020 | 2019

Introduction to Managing Code with Git

Wellcome Centre for Human Genetics

Oxford, United Kingdom

- I led a 2-hour introduction to working with Git. Materials, including slides and exercises are available at kasia.codes/talk/into_to_git/.

SELECTED GRANTS

2022 | 2020

Visegrad Grant to organize 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.

NON-PROFIT WORK

present | 2018

President

NGSchool Society

- The goal of the Society is to promote and support science, with emphasis on computational biology.
- President since 2019; Vice President 2018 - 2019, Founder