

# 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.

## RESEARCH EXPERIENCE

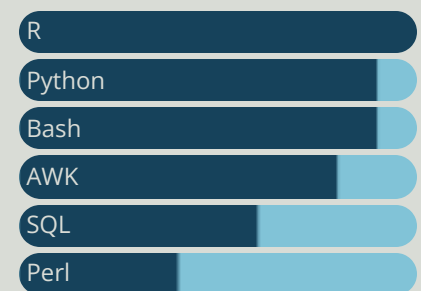
- 2021
- Intern**  
[Novo Nordisk Research Centre Oxford](#) 📍 Oxford, United Kingdom
    - I used NLP based methods to screen biomedical articles and identify potential therapeutic targets. I built R Shiny App to allow colleagues within the company to investigate results from our pipeline.
- present  
|  
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*.
- 2017  
|  
2016
- Visiting Graduate Student**  
[Pemberton group](#) 📍 University of Virginia, USA
    - Worked on Epigenetic regulation in prostate cancer.
    - Performed experiments and analyzed data from RNA-seq, ATAC-seq, and ChIP-seq assays.
- 2016  
|  
2015
- Research Assistant**  
[Zebrafish Developmental Genomics](#) 📍 IIMCB, Warsaw, Poland
    - I worked on the project: *Elucidating gene regulatory network of zebrafish heart development using genomics*.
    - I was responsible for both computational and experimental aspects of the project.

View this CV online  
[🌐 kasia.codes/cv/](#)

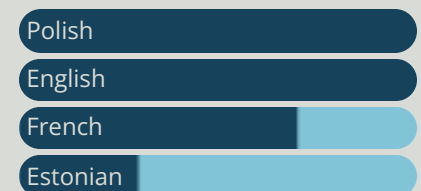
## CONTACT

✉ [kasia@well.ox.ac.uk](mailto:kasia@well.ox.ac.uk)  
🐦 [kzkedzierska](#)  
📄 [github.com/kzkedzierska](#)  
🔗 [kasia.codes](#)  
in [kzkedzierska](#)

## CODING SKILLS



## 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 2022-09-30.

## 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.
- 2015  
|  
2011
- **B. Sc. Eng., Biotechnology**  
Warsaw University of Technology  Warsaw, Poland

## PUBLICATIONS

- 2022
- **Discordant prognosis of mismatch repair deficiency in colorectal and endometrial cancer reflects variation in antitumour immune response and immune escape**  
Mark A Glaire, Neil AJ Ryan, Marieke E Ijsselsteijn, **Katarzyna Kedzierska**, Sofia Obolenski, Reem Ali, Emma J Crosbie, Tjalling Bosse, Noel Fcc De Miranda, David N Church  The Journal of pathology
- 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
- 2020
- **Prognostic integrated image-based immune and molecular profiling in early-stage Endometrial Cancer**  
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  Cancer Immunology Research
- 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
- **Genomic analysis of DNA repair genes and androgen signaling in prostate cancer**  
K. Jividen, **K. Z. Kedzierska**, C.-S. Yang, K. Szlachta, A. Ratan and B. M. Paschal  BMC Cancer
- 2018
- **SONICS: PCR stutter noise correction in genome-scale microsatellites**  
**K. Z. Kedzierska**, L. Gerber, D. Cagnazzi, M. Krützen, A. Ratan, L. Kistler  Bioinformatics



## POSTERS, AND TALKS

- 2022

  - **Systematic characterisation of chromatin modifiers in endometrial cancer**  
European Association for Cancer Research 2022 Congress

• Poster presentation

📍 Seville, Spain
- 2019

  - **Analysis of the mutational burden across gene sets in cancer**  
Polish Bioinformatics Society Symposium

• Invited talk

📍 Cracow, Poland
- 2018

  - **Differential mutation analysis across gene sets in cancers**  
Biology of Genomes 2018

• Poster

📍 Cold Spring Harbor, NY, USA
- 2017

  - **Epigenetic regulation of prostate cancer**  
Visiting Graduate Traineeship Program Grantees Symposium

• Talk

📍 Charlottesville, VA, USA



## AWARDS AND HONOURS

- present  
|  
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.

📍 Oxford, UK
- 2022  
|  
2021

  - **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.

📍 Oxford, UK
- 2019  
|  
2018

  - **Best Master Thesis in Bioinformatics**  
Polish Bioinformatics Society

• *Analysis of the mutational burden across gene sets in cancer* - Best Master Thesis defended in Bioinformatics in 2018 in Poland.

📍 Poland
- 2017  
|  
2016

  - **Visiting Graduate Traineeship Program, now known as BioLAB**  
Fulbright Poland

• The Visiting Research Graduate Traineeship Program offered 12-month research traineeships for outstanding, qualified students from the life sciences at selected institutions in the United States.

📍 University of Virginia, VA, USA
- 2015








  - **Grasz o Staz**  
PwC Poland

• "Grasz o Staz" competition was a national, prestigious and highly competitive (1:25 success rate) scholarship program in Poland organized by PwC.

📍 Poland




## 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 available at [github.com/kzkdzierska/ngs22\\_unsupervised](https://github.com/kzkdzierska/ngs22_unsupervised).
- 2021 • **Data visualization in bioinformatics - hackathon mentor**  
Online hackathon NGSprint  Discord
- I led the hackathon in data visualisation 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/kzkdzierska/NGSprint\\_data\\_viz](https://github.com/kzkdzierska/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/](https://kasia.codes/talk/intro_to_python/) and **Python for Data Science** [kasia.codes/talk/py4ds/](https://kasia.codes/talk/py4ds/).
- 2019 • **Unsupervised learning, Introduction to Python**  
#NGSchool2019: Machine Learning for Biomedicine  Ostróda, Poland
- Tutor for the Introduction to Python (3 h workshop) and for the Unsupervised learning (1,5 h lecture).
  - Materials for the Introduction to Python are available on [github](https://github.com)
- 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/kzkdziersa/r\\_intro](https://github.com/kzkdziersa/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/](https://kasia.codes/talk/into_to_git/).
- 2017 • **ATAC-seq workshop**  
#NGSchool2017: Single-cell Sequencing  Jachranka, Poland
- Invited speaker
  - Materials for the course can be available on [github.com/kzkdzierska/ATACseq\\_workshop](https://github.com/kzkdzierska/ATACseq_workshop)



## ATTENDED WORKSHOPS, SUMMER SCHOOLS

- 2019 • **Machine Learning Summer School**  
Imperial College London, University College London  London, United Kingdom



## GRANTS

- 2022  
|  
2020 • **Visegrad Grant to organize #NGSchool2020 postponed until 2022**  
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 9 people and led the organisation of summer school, conference, online seminars and hackathon.

2019

● **Visegrad Grant to organize #NGSchool2019**

Visegrad Fund

- 23,500 EUR awarded towards organising #NGSchool2019 allowed to keep the cost of attending the school to the minimum and record the lectures for broader access.



**NON PROFIT WORK**

2022

|

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