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.

RESEARCH EXPERIENCE

2021

Intern

Novo Nordisk Research Centre Oxford — Oxford, United Kingdom

- I used NLP based methods to screen biomedical artciles 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

Mentored by D. Church and D. Woodcock — University of Oxford, UK

- PhD project: *Functional and evolutionary characterisation of chromatin organisation in endometrial cancer*

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.

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

View this CV online on kasia.codes/cv/

CONTACT

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- kzkedzierska
- github.com/kzkedzierska
- kasia.codes
- kzkedzierska

CODING SKILLS

- R
- Python
- Bash
- AWK
- SQL
- Perl

LANGUAGES

- Polish
- English
- French
- Estonian

*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 2022-01-27.

2018 | 2015

M. Sc. Eng., Biotechnology

Warsaw University of Technology — Warsaw, Poland

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

2015 | 2011

B. Sc. Eng., Biotechnology

Warsaw University of Technology — Warsaw, Poland

PUBLICATIONS

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

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

The Biology of Genomes 2018 — Cold Spring Harbor, NY, USA

- Poster

2017

Epigenetic regulation of prostate cancer

Visiting Graduate Traineeship Program Grantees Symposium — Charlottesville, VA, USA

- Talk

AWARDS AND HONOURS

present | 2021

Senior Hulme Scholarship

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

2019 | 2018

Best Master Thesis in Bioinformatics

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

2017 | 2016

Visiting Graduate Traineeship Program

• 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.

2015

Grasz o Staz

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

TEACHING EXPERIENCE

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 areound 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

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

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/.

2017

ATAC-seq workshop

#NGSchool2017: Single-cell Sequencing

Jachranka, Poland

- Invited speaker
- Materials for the course can be available on gitub.com/kzkedzierska/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 summer school focusing on ML application in CompBio. Due to COVID-19 pandemic we organised a virtual events in 2020 & 2021 and are planning in person summer school and conference in 2022.

2019

Visegrad Grant to organize #NGSchool2019

Visegrad Fund

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

NON PROFIT WORK

2021 | 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