

Aibek Kappassov

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Education

Imperial College London

MSc Bioinformatics and Theoretical Systems Biology - Merit

London, UK

Oct 2022 - Nov 2023

Purdue University

BSc Mathematics and Statistics - 3.45/4.00

- Thomas Arai Scholarship, Department of Mathematics

IN, USA

Jun 2019 - Dec 2021

Research Experience

Seoul National University

Research Intern, Dr. Yongdae Shin group

South Korea

Mar 2025 - present

Spatiotemporal Perturbation of Bimolecular Condensates

- Characterized protein interactions regulating bimolecular condensate composition and functions
- Performed bioinformatics analysis using protein design and molecular dynamics software

Imperial College London

Graduate Researcher, Dr. Robert Endres group

Remote

Jun 2024 - Aug 2024

Turing Pattern Network Design

- Designed and implemented mathematical models of molecular networks using deterministic and stochastic approaches for pattern formation analysis
- Wrote Python scripts to run large-scale simulations leveraging HPC throughput
- Developed a framework that informed the design of synthetic patterns in gene regulatory networks

Work Experience

Stealth Biotech Startup

Co-founder

London, UK

Dec 2023 - Nov 2024

AI platform for peptide-based drug discovery

- Managed an interdisciplinary team to develop and deploy a generative AI model for therapeutic peptide design and optimization
- Accepted to the Purdue Innovates accelerator program for startups
- Conducted customer discovery interviews; established relationships with biotech hubs and VC firms across the US, UK, and Europe

Publications

1. Optimal network size for most robust Turing patterns. H. Shaberi, **A. Kappassov**, A. Matas-Gil, R. G. Endres. **Scientific Reports**, 2025

Skills

Dry-lab

- **Platforms and Environments:** Linux, High-Performance Computing, Google Colaboratory
- **Scripting Languages:** Python (Pytorch, Pandas, NumPy), Bash
- **Protein Design:** RFDiffusion, ProteinMPNN, AlphaFold2

Other

- **Languages:** English, Russian, Turkish
- **Interests:** Life Science Communication, Decentralized Science, Entrepreneurship