

# Natan Szczepaniak

## Physics MPhys Graduate

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## EDUCATION

### University of Exeter

#### Physics MPhys

September 2017 – June 2021

Exeter, UK

- Grade: 2:1
- Final Project: Machine Learned Potentials for Molecular Dynamics Simulations (79%)

### Strode's College

#### A-Level

September 2015 – Jul 2017

Egham, UK

- Maths: A    Physics: A    Media Studies: A\*

## EXPERIENCE

### Associate Consultant

#### ECS (GlobalLogic)

September 2021 – Current

London, UK

- Enabling teams to adopt an MLOps framework on AWS Sagemaker in a major high street bank. Working between several data science teams as a Subject Matter Expert advising them on best practices and solution design.
- Led a team of 8 junior developers to build an MVP for a full stack application which calculated the carbon emissions of AWS resources. The application was used by the sales team to drive more sales in the ESG sector.
- Developed a proof of concept phone verification system for a major retailer which helped in saving £100,000 in marketing costs.

### Maths & Physics Tutor

#### Private A-Level/GCSE Tutoring

February 2019 – Jun 2019

Online

- Enhanced my ability to clearly present complex information which was seen by the enhanced performance of the students.
- Main duties included preparing lesson content and guiding students through past-papers.

### Data Science Intern

#### Applegate Marketplace

December 2018

Barnstaple, UK

- Assessed efficiency of in-house web-scraping program by analysing data from SQL database.
- Developed a proof of concept logistic regression customer ranking system based on customer interaction data in Python.

## TECHNICAL SKILLS

Linux    Python    Javascript/Node  
AWS    Docker    SQL    Go    Bash  
HTML+CSS    Git    Vim    NGINX  
LateX    MATLAB

## LANGUAGES

- English (Fluent)    Polish (Fluent)
- Russian (Basic)

## PROJECTS

### Machine Learned Potentials for Molecular Dynamics Simulations (Master's Project)

- Using Quantum Density-Functional-Theory data to model classical inter-atomic potentials with the help of a high-dimensional neural-network.
- The generated inter-atomic potentials can be used to simulate more complex structures at a fraction of the speed with comparable accuracy.

### Personal Website (natan.co.uk)

- Created a dynamic website front-end (HTML,SCSS) and back-end (Python,Flask) along with a custom CMS system based on a MySQL database.
- Hosted said site using an NGINX web-server on a VPS running Debian together with a Let's Encrypt SSL Certificate. This can be found at [www.natan.co.uk](http://www.natan.co.uk)

### Chemical Reaction Diffusion Simulation

- Simulated 2 chemicals reacting together using the Gray-Scott model to generate unique patterns found in biological systems (Turing Pattern). Implementing it in Python and C++ I found a x10 increase in speed.

### Personal Facebook Messenger Bot

- Developed a fully functional personal facebook messenger bot which allows me to control my other personal devices. Functionalities include server/service monitoring, remote code execution, QR code generation, IP location lookup, fetching images and much more.

## INTERESTS

Windsurfing, Guitar, Linux home-lab tinkering, IoT and Hiking.

## REFERENCES

Available on request.