

Karolis Jankauskas

A Biochemical Engineer turned Machine Learning Engineer.

Languages Python • Cython • C++ • CUDA • R • Julia • C

Libraries Keras • TensorFlow • Sklearn • SciPy ecosystem • OpenCV • Dlib

Backend Flask • Django

Databases PostgreSQL • RabbitMQ • Redis • Apache

Tools Bash • Git • Docker • AWS • Celery • Jupyter

Platforms Ubuntu • macOS • Windows

Other Deep Learning • CNN • LSTM • Sequence Models • Time Series

PhD research Scheduling • Evolutionary Programming • Mathematical Programming

London, UK

+44 7858 271487

info@kjankauskas.com

www.kjankauskas.com

www.github.com/karolisjan

www.linkedin.com/in/karolis-jan

EXPERIENCE



Data Engineer (internship)

WorldQuant

London, UK, 2018 September – Present

WorldQuant is a quantitative asset management firm with more than 700 employees spread across 26 offices in 15 countries.

- Developing an efficient way of detecting and processing anomalous and/or corrupted large-scale time-series data.



Machine Learning Engineer (worked part-time whilst doing a PhD)

Aiden.ai

London, UK, 2018 February – 2018 September

Aiden is a Natural Language Processing (NLP) powered virtual assistant who helps marketers make better decisions.

- Developed and deployed a REST API to detect anomalies in advertising time-series data in real-time.
- Built a multi-task deep neural network-based model with entity embeddings of categorical variables to answer questions such as “What will the total number of impressions, link clicks, and app installs be next week if I spend \$X on ads ABC targeting Y audience in Z location?”.
- Created a neural network and genetic algorithm-based system for recommending an optimal way to distribute weekly advertising budget to maximise ad sets performance, e.g. impressions, link clicks, and app installs.



Data Scientist (worked part-time whilst doing a PhD)

Picasso Labs

London, UK, 2017 Feb – 2018 February

Picasso Labs is recognised as one of Unilever Foundry’s most ambitious and innovative start-ups of the past 5 years.

- Using a pre-trained Inception v3 CNN, HSV color histograms, and entity embeddings of date, time, and image tags developed a system for recommending images to improve marketing performance on social media.
- Re-used the system above to create a content-based image retrieval engine.
- Built a custom facial expressions recognition model and applied it on over 5000 web-scraped images from US online media to investigate “visual bias”. See www.newsweek.com/liberal-media-not-biased-trump-thinks-703291 and www.picassolabs.com/trump.
- Applied regression and non-parametric statistical tests to determine best performing image categories and segments.



Teaching Assistant

UCL Biochemical Engineering

London, UK, 2016 February – 2018 February

Supervised research and taught MSc and MEng students discrete-event simulation, mathematical programming, evolutionary programming, and multi-objective optimisation.



Consultant (internship)

Sphere Fluidics Ltd

Cambridge, UK, 2014 June – 2014 August

Created fluid-flow models of microfluidic chips for a novel single-cell screening and analysis system.



Research Associate
UCL Advanced Centre for Biochemical Engineering
London, UK, 2013 June – 2013 August

Performed multi-variate data analysis on mass spectrometry data to improve the expression of virus-like particles from *Pichia pastoris* cells for a universal influenza vaccine project.

EDUCATION



Udacity
2017 – 2018
Nanodegree, Artificial Intelligence, Certificate of Completion

- Applied Depth-First Search and Constraint-Propagation to solve Sudoku.
- Experimented with Minimax, Alpha-Beta Search, and Iterative Deepening algorithms to create an AI to beat human players in the game of Isolation.
- Using Planning Domain Definition Language (PDDL), A*, and propositional logic developed a solution to find the most efficient route to route air cargo to their respective destinations.
- Using a preprocessed dataset of tracked hand and nose positions extracted from video, trained a set of Hidden Markov Models (HMM) to identify individual sign language words.
- Implemented and applied feed-forward NN, CNN, and RNN on a variety of problems such as classification of over 100 different dog breeds, facial keypoints detection, time-series prediction, and language models.

Some of the projects are available at www.github.com/karolisjan/AIND.



UCL
London, UK, 2014 – 2018 (thesis submitted in 2018 September, awaiting Viva)
PhD, Biochemical Engineering (Operational Research, Combinatorial Optimisation)

Using Python, C++, CUDA, and Docker, developed a multi-platform genetic algorithm-based tool for continuous-time multi-objective planning and scheduling of biopharmaceutical facilities under deterministic and stochastic demand.

- Accomplishments*
- Presented a keynote lecture at the 27th European Symposium on Computer Aided Process Engineering (ESCAPE 27), Barcelona, Spain, 2017.
 - Awarded a Year 1 Research Project Prize for Best PhD Project and Poster.



UCL
London, UK, 2010 – 2014
Master of Engineering (MEng), Biochemical Engineering, First-Class Honors

- Accomplishments*
- Received Jacobs Engineering Design Project Prize.
 - Received Head of Department Commendation Award.

- Activities*
- Fitness instructor at UCLU Muay Thai Club.

PUBLICATIONS & TALKS

Jankauskas, K., Papageorgiou, L.G. and Farid, S.S., 2017. Continuous-Time Heuristic Model for Medium-Term Capacity Planning of a Multi-Suite, Multi-Product Biopharmaceutical Facility. In *Computer Aided Chemical Engineering* (Vol. 40, pp. 1303-1308). Elsevier.

Jankauskas, K., McCartney, GR., Osborne, MD., Papageorgiou, LG., Farid, SS. 2017. Multi-Objective Capacity Planning for Multi-Product Biopharmaceutical Facilities Under Uncertainty, 253rd ACS National Meeting, San Francisco, USA, April 2-6.

Jankauskas, K., Papageorgiou, LG., Farid, SS. 2016. Production Scheduling of a Multi-Product Biopharmaceutical Facility Using a Genetic Algorithm, 28th European Conference on Operational Research (EURO), Poznan, Poland, July 4-8.

PROJECTS

- www.github.com/karolisjan/BiopharmaScheduling/tree/development a scheduling library for biopharma
- www.github.com/karolisjan/DeepLearning a collection of deep learning projects
- www.github.com/karolisjan/Genetic-Programming AI controllers created using genetic programming