Karolis Jankauskas

A Biochemical Engineer passionate about data science, machine learning, and technology in general.

London, UK

+44 7858 271487
info@kjankauskas.com

www.kjankauskas.com
www.linkedin.com/in/karolis-jan
www.github.com/karolisjan

SKILLS

Python • R • C++ • CUDA • Julia • Matlab • HTML • CSS • JavaScript
Keras • TensorFlow • PySpark
Flask • Django • Celery • RabbitMQ • Docker • PostgreSQL • AWS
Deep Learning • CNN • LSTM • Sequence Models
Evolutionary Programming • Mathematical Programming • Planning & Scheduling
Hypothesis Testing • Time-Series Analysis • Multi-Variate Data Analysis

EXPERIENCE

Machine Learning Engineer
Aiden.ai
London, UK, 2018 February – Present

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 real-time advertising time-series data.
- Built a multi-task deep neural network-based model with entity embeddings of categorical variables for predicting the performance of ad sets for a given week (SMAPE 10-20%)
- Developing a neural network and genetic algorithm-based system for determining an optimal way of distributing weekly advertising budget to maximise impressions, link clicks, and app installs.

Data Scientist
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.

- Combined a pre-trained CNN (Inception v3) with HSV color histograms and entity embeddings of date, time, and image tags to develop a recommendation system for improving advertising performance (F1-score 0.8).
- Re-used the system above to create a content-based image search engine.
- Built statistical models to determine best performing image categories.
- Web-scraped over 5000 images from US online media to check for visual bias (compared images based on facial expressions and predefined objects).
  See www.newsweek.com/liberal-media-not-biased-trump-thinks-703291 and www.picassolabs.com/trump.

Teaching Assistant
UCL Biochemical Engineering
London, UK, 2016 February – 2018 February

Supervised research projects and taught MSc and MEng students discrete-event simulation, mathematical programming (LP and MILP), evolutionary programming, and multi-objective optimisation.

Consultant
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
PhD, Biochemical Engineering (Operational Research)

Using Python, Cython, C++, and Docker, developing multi-platform evolutionary programming-based tools for multi-objective capacity planning and scheduling of biopharmaceutical facilities in continuous-time:
www.github.com/karolisjan/BiopharmaScheduling
www.github.com/karolisjan/ContinuousTimeCapacityPlanning

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.