Karolis Jankauskas

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Experienced Data Scientist and Operational Researcher with a Doctor of Philosophy (PhD) focused in Biochemical Engineering from UCL. Skilled in Python, C++, Statistical/Machine Learning, Evolutionary Programming, Mathematical Optimisation, and Data Mining and Analysis.

EDUCATION

UCL, London, UK, 2014 – 2018
PhD, Biochemical Engineering

Sponsored by *Eli Lilly & Co.* to develop a tool for stochastic, multi-objective capacity planning and scheduling of biopharmaceutical production across multiple sites. Supervised by Prof. Suzanne S. Farid and Prof. Lazaros Papageorgiou.

Accomplishments

- Awarded Year 1 Research Project Prize for Best PhD Project and Poster (UCL).
- Developed a novel, continuous-time Genetic Algorithm (GA) and Particle Swarm Optimisation (PSO) based method for capacity planning and scheduling. **Presented at the 28th European Conference on Operational Research (EURO), Poznan, Poland, 2016**.
- Developed a tool based on multi-objective GA and GPU-accelerated Monte Carlo for capacity planning and scheduling of multi-product biopharmaceutical facilities under uncertain product demand. **Presented at the 253rd American Chemical Society (ACS) National Meeting, San Francisco, USA, 2017.**
- Gave a **keynote lecture** on my work (www.github.com/karolisjan/Continuous-Time-Capacity-Planning) at the **27th European Symposium on Computer Aided Process Engineering (ESCAPE 27), Barcelona, Spain, 2017.**

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

Accomplishments

- Received **Jacobs Engineering Design Project Prize for Outstanding Team Effort** for a Year 3 Design Project. The project included aspects of project scheduling, economic appraisal, and sensitivity analysis to predict the impact of uncertainties.

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

Implemented and applied **Deep Learning** (Convolutional and Recurrent Neural Networks, and other advanced models) on a variety of different topics including **Computer Vision** (e.g. **facial keypoints detection**) and **Natural Language Processing** (e.g. **translation**, **sentiment analysis**). List of projects is available at www.github.com/karolisjan/AIND.

EXPERIENCE

Data Scientist,
Picasso Labs, London, UK, 2017 February – present

Developing a large-scale computer vision (CV) and machine learning (ML) based pipeline for recommending visual content to individual brands to use on social media.

Highlights

- Developing statistical models to understand the relationship between the various semantic image attributes, the time the it was posted, and its performance, i.e. engagement or impressions.
- Investigated US online media bias by web scraping over 5000 news articles and images from 12 different websites, performing topic extraction, and applying CV and ML to classify facial expressions. See www.picassolabs.com/trump.

Teaching Assistant
UCL Biochemical Engineering Dept., London, UK, 2015 September – present

Supervising research projects and teaching Bioprocess Systems Engineering course to MEng and MSc Biochemical Engineering students. Specific course highlights include Discrete-Event Simulation, Mathematical Programming, Meta-Heuristics, and Multi-Criteria Optimisation.

Consultant
Sphere Fluidics Ltd, Cambridge, UK, 2014 June – 2014 August

Developed models to characterize different microfluidic cell sorter designs for a novel single-cell screening and analysis system.

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

Worked on the optimisation of virus-like particles (VLPs) production from *Pichia pastoris* cell expression system for a universal influenza vaccine.

Accomplishments

- Received **Head of Department Commendation Award**

SKILLS

Actively using

C/C++	*Python*	*Julia, GAMS*
Boost; CUDA	SciPy ecosystem; Pandas; PyGreSQL; Jupyter; Sklearn; Keras; TensorFlow; OpenCV; Cython;	JuMP
e.g. High Performance (GPU) Computing; Monte Carlo Simulation; Multi-Objective Optimisation	*e.g.* Web-Scraping; Data I/O; Deep Learning; Wrapping up C++ code	*e.g.* Mathematical Optimisation; Mixed Integer Linear Programming

Learning

R + tidyverse; Scala + Spark; Haskell

Used in the past

MATLAB; C#