Vince Jankovics

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Skills

- Machine learning, data science, data processing
- Python (PyTorch, TensorFlow, Ray, SciPy, NumPy, Scikit-learn, OpenCV, Flask)
- C/C++, Matlab & Simulink, Java, HTML/CSS
- GCP, Kubernetes, Kubeflow, MySQL, MongoDB, Redis
- Linux, Docker, HTCondor, ROS, Gazebo, LaTeX

Education

2015-2016 **MSc Robotics**, University of Bristol & University of West England.
Dissertation topic: Nonlinear dynamic gain scheduling control for the Bixler model
Graduated with Distinction, received 'The Examiners Prize for the Best Dissertation'

2012-2015 **BSc Mechatronics**, University of Southern Denmark.
Thesis topic: Artificial neural network based adaptive complaint control for robotic arms
Final grade: A

Experience

2019 **Research Visitor**, City, University of London, London.
- Worked on neuro-symbolic learning for Inductive Logic Programming problems.
- Built on a previously developed system, improving the performance and providing a Python interface for the C++ legacy code.

2019 **Freelance Machine Learning Engineer**, Miscellaneous clients, remote.
- Worked on a proof of concept for a financial forecasting model that involved large amounts of unevenly spaced timeseries data.
- Proposed a machine learning and infrastructure solution for a knowledge graph based search engine tailored to a specific domain.
- Developed a web scraping system for market information gathering in various domains.
- Developed a website (frontend, backend and async data processing) to support in-house operations of a finance startup.

2019 **Freelance Machine Learning Engineer**, 2 months, GTN Ltd., London.
- Worked on software engineering and DevOps for large scale cluster systems to support the research team.
- Designed and implemented a system architecture that made experimentation more cost efficient and much faster.
- Worked with the Google Cloud Platform involving a broad range of services to provide the most optimal solution to the given problem.
- Reviewed alternatives to GCP products on AWS and Azure and proposed a migrations strategy.
- Proposed architectural changes to the research team in regards to generative models.
- Worked with graph convolutional networks to contribute to the challenge of drug discovery with machine learning.

2019 **Freelance Machine Learning Consultant**, Catalyst AI, London.
- Worked on proof-of-concepts and feasibility studies for machine learning systems, e.g. retail price prediction, trend identification in fashion and sentiment analysis.
- Prepared and held workshops to provide hands-on experience for clients in ML.

2018 **Freelance Robotics Consultant**, 3 months, iRobotX, remote.
- Developed system architecture for a humanoid walking robot.
- Simulated and prototyped the control algorithm for bi-pedal locomotion using Simulink.
- Implemented the Linux middleware for the actuators and sensors on the on-board controller.

2017-2018 **Machine Learning Engineer**, Cambridge Consultants Ltd., Cambridge.

- Worked on advanced machine learning systems to provide solutions to clients by improving and tailoring published state-of-the-art algorithms.
- Contributed to the Sketches to Art demo that aimed to mimic human creativity and intuition.
- Contributed to an image restoration system that cleared up highly distorted images.
- Worked on architecture design of GAN based deep learning systems.
- Developed an in-house ML framework for training management and logging.
- Experimented with multi-agent reinforcement learning systems using the OpenAI gym.
- Explored possibilities of data augmentation with GANs to utilize highly imbalanced datasets.
- Tailored object detection and segmentation models to specific client datasets.
- Developed highly optimized code to run deep learning models in real-time.

2016-2017 **Application Support Engineer**, MathWorks Ltd., Cambridge.

- Provided technical support for customers in various fields, e.g. machine learning, robotics, control systems, signal processing, embedded systems.
- Collaborated with other teams in projects to develop technical and soft skills.
- Contributed to the IMAV 2017 drone competition by developing a simulation framework using Gazebo, ROS and Simulink and making sure that the inteface was straightforward to use by the competing teams.
- Developed tests for new features of the Matlab Deep Learning toolbox.

2016 **Robotics Intern**, 2 months, DroneX Ltd., Bristol.

- Worked on software development, control system design and mechanical setup for UAV and bipedal robotic systems.
- Explored bipedal locomotion algorithms.
- Prototyped control systems using simulators (Gazebo, V-REP)

2013-2014 **Student Research Assistant**, SDU, Sonderborg - DK, Bielefeld - GER.

- Contributed to the EMICAB collaborative research project.
- Worked on software development and design of tactile sensors.
- Designed and implemented a novel curved tactile sensitive fingertip, including mechanical structure, 3D printing and electronics.
- Implemented an autonomous testing system for the tactile sensors using C++.
- Integrated the testing framework with a Universal Robots robotic arm for physical data acquisition.

Publications and Talks

2018 **Sketches into Art**, *V. Jankovics*, Guest lecture at the University Centre Peterborough.

2016 **Artificial neural network based compliant control for robot arms**, *V. Jankovics, S. Mátéfi-Tempfli and P. Manoonpong*, Int. Conf. on the Simulation of Adaptive Behavior 2016, 10.1007/978-3-319-43488-9_9.

2014 **High resolution tactile sensors for curved robotic fingertips**, *A. Drimus, V. Jankovics, M. Gorsic, and S. Mátéfi-Tempfli*, Living Machines 2014 Proceedings, 10.1007/978-3-319-09435-9_37.

2014 **Novel high resolution tactile robotic fingertips**, *A. Drimus, V. Jankovics, M. Gorsic, and S. Mátéfi-Tempfli*, IEEE Sensors 2014 Proceedings, 10.1109/ICSENS.2014.6985118.

Online Available Materials

- Sketches to Art: https://www.cambridgeconsultants.com/vincent
- Image restoration: https://www.cambridgeconsultants.com/deepray
- GAN learning visualized: https://youtu.be/a1fjBkwRDY8
- Extreme road sign detection: https://youtu.be/jeQ2TI7hHSg
- IMAV 2017: http://www.imavs.org/2017/virtual-challenge.1.html
- EMICAB: http://www.emicab.eu/