NIKOLAY NIKOLOV

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EDUCATION

IMPERIAL COLLEGE LONDON
MEng Electronic and Information Engineering
2014-2018 | London, UK
First Class Honors 72.4%
GPA equivalent: 3.8 - 4.0

MODULES INCLUDE:
Computer Vision • Robotics
Machine Learning
Control Systems
Embedded Systems
Signal Processing
Operating Systems
Compilers • OOP
Networks • Databases
Algorithms and Data Structures

ONLINE COURSES:
- Deep Reinforcement Learning - Sergey Levine, UC Berkeley
- CNNs for Visual Recognition - Andrej Karpathy, Stanford
- Machine Learning - Andrew Ng, Stanford

SKILLS

PROGRAMMING
Expert: C/C++ • Python
Intermediate: Java • Shell • SQL
MATLAB • JavaScript • HTML/CSS

SOFTWARE
Linux • ROS • OpenCV • CUDA
TensorFlow • git • make

HARDWARE
mbed • Raspberry Pi
FPGA • Pixhawk • Arduino

ROBOTICS
Vision • Deep Learning
SLAM • Probabilistic Robotics

LANGUAGES
English • Bulgarian • Russian

AWARDS

Jessel Rosen Research Award
2015 | London, UK

International Young Physicists Tournament - Bronze Medal
2013 | Taipei, Taiwan

STEM distinction by the President of Bulgaria
2013 | Sofia, Bulgaria

ENGINEERING EXPERIENCE

OCADO TECHNOLOGY | Robotics Research Intern
July 2017 - Sep 2017 | Hatfield, UK
Deep Reinforcement Learning for robot picking
- Implemented a Deep RL algorithm for picking objects from a basket based on camera input
- Based on a CNN combined with CEM as in **Levine et al.**
- Implemented in TensorFlow and deployed on a UR10 robotic arm

DYSON ROBOTICS LAB | Undergraduate Research Assistant
Jan 2017 - Sep 2017 | Imperial College London
Bayesian Fusion for Volumetric SLAM based on Occupancy Mapping
- Worked under the supervision of Dr Stefan Leutenegger
- Developed Bayesian formulation for volumetric occupancy fusion from depth camera
- Prototyped real-time implementation for a CPU or a CUDA-enabled GPU
- Submitted paper to IEEE RA-L and ICRA 2018

AERIAL ROBOTICS LAB | Undergraduate Research Assistant
June 2015 - Jan 2017 | Imperial College London
Built a Walking Hexapod Quadcopter that can both walk and fly
- Demo: **nikonikolov.com/projects/wkquad**

PROJECTS

THIRD YEAR GROUP PROJECT 2017 | Imperial College London
Baxter robot that autonomously delivers snacks indoors
- Worked under the supervision of Dr Petar Kormushev (Robot Intelligence Lab)
- Built ROS-based algorithm for localization, path-planning and obstacle avoidance

DRONE DELIVERY SYSTEM 2017 | Providence, RI, US
Raspberry Pi-operated DJI M-100 to deliver food in Brown University
- Demo: **nikonikolov.com/projects/dronedelivery**

EUROBOT 2017 ROBOTICS COMPETITION 2017 | Imperial College London
- Built a robot to recognize, collect and move objects
- Work involves ROS, Embedded Systems, Localization, State Estimation

HACKZURICH 2016 | Zurich, Switzerland
Built Android image-processing and OCR based app that can scan grocery receipts to keep track of fridge contents. Used OpenCV and Google OCR API

UK NAO HACKATHON 2016 | London, UK
Deployed functionality on Pepper robot to recognize an object using Clarifai API and pronounce the name of the object in any language

COURSEWORK
- Collaborative Filtering for movie recommendation
- SVM for MNIST dataset
- Raspberry Pi robotic car that autonomously navigates and recognizes objects
- C90 to MIPS compiler implemented in C++
- MIPS CPU and cache emulators implemented in C++
- Real-time image-processing FPGA configuration that tracks human eye movements

ROS FOR SLACKWARE
Open-source contribution to ROS and SlackBuilds.org to enable ROS on Slackware Linux

EXTRACURRICULAR ACTIVITIES

Imperial Entrepreneurs - Vice President 2015-2016
Aikido - 1st Dan Black Belt 2007 - Present
Startup "mApp it" - Co-founder 2013 - 2014