

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 <https://arxiv.org/abs/1603.02199>
- Implemented in TensorFlow and deployed on a UR10 robotic arm

DYSON ROBOTICS LAB | UNDERGRADUATE RESEARCH ASSISTANT

Jan 2017 - September 2016 | 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/portfolio/wkquad.html
- Built the whole robot from scratch, developed custom walking algorithm in C++

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/portfolio/dronedelivery.html

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