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: 3.7 - 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
Communication Systems

ONLINE COURSES:
Robotics - UPenn
Machine Learning - Stanford
Reinforcement Learning - Imperial
Concurrent Programming - MIT

SKILLS

LANGUAGES
English • Bulgarian • Russian
PROGRAMMING
C/C++ • Python • Java • Shell
MATLAB/Simulink • JavaScript
HTML/CSS • SQL • Assembly
SOFTWARE
Linux • ROS • OpenCV
git • make • PCL [learning]
HARDWARE
mbed • Raspberry Pi
FPGA • Pixhawk • Arduino

ROBOTICS
Localization • Vision • Embedded
Probabilistic Robotics • Aerial

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

ARM LTD | Hardware Engineering Intern
July 2016 - Sep 2016 | Sheffield, UK
Developed a full-scale transaction logger for a System Memory Management Unit
- Decreased debug time by 50%; currently used by the whole team of 20
- Designed a specialized language to implement the logger, automate inclusion of new hardware interfaces and integrate in new projects
- Implemented in Python a YAML to System Verilog compiler for the custom language

AERIAL ROBOTICS LAB | Undergraduate Research Assistant
June 2015 - Present | Imperial College London
Built a Walking Hexapod Quadcopter that can both walk and fly
- Developed Inverse Kinematics walking algorithm in C++ for ARM mbed
- Created a mathematical model and developed simulation using OpenCV
- Developed a library for Dynamixel servo motors and integrated ROS actions
- Mini demo at `https://nikonikolov.github.io/niko/demos/wkquad`
- Currently writing a paper

PROJECTS

EUROBOT 2017 ROBOTICS COMPETITION   Ongoing | Imperial College London
Technical leader of Imperial College team for the Eurobot international competition.
- Building a robot to recognize and collect objects and construct a moon base from them
- Work involves ROS, OpenCV, Embedded Systems, Localization

DRONE DELIVERY SYSTEM   Ongoing | Providence, RI, US
Raspberry Pi-operated DJI M-100 to deliver food in Brown University

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

IC HACK   2016 | London, UK
Built a cloud-based app to detect the number of free parking spaces based on aerial images. Used OpenCV and Google Vision API.

COURSEWORK
- 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
Made open-source contribution to ROS to enable usage on Slackware Linux

EUDYPTULA CHALLENGE
Currently Level 4 of the Linux Kernel Eudyptula Challenge

EXTRACURRICULAR ACTIVITIES

Imperial Entrepreneurs - Vice President   2015-2016
- Organized Speaker Series events, coordinated internal operations

Aikido - 1st Dan Black Belt   2007 - Present
- Taught classes for both adults and children for more than 2 years

Startup "mApp it" - Co-founder   2013 - 2014
- Led the project for location-based communication app for Android

Rotaract Club "Varna-Euxinograd" - Treasurer   2012-2014
- Established the annual engineering forum "Next Step" for high-school students