

# Filip Nowicki

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## RELEVANT SKILLS

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**Artificial Intelligence:** Computer Vision – Real-Time Tracking, 3D Reconstruction, Basic AR; Robotics – Perception, Sensors, Robotic Simulator Development; Machine Learning – Shallow ML, Object Recognition, Recent DL Architectures.

**Coding Languages:** Advanced – Python, MATLAB; Intermediate: C++; Basic – C, Java.

**Languages:** English (fluent), Polish (native), French (conversational), Russian (conversational).

## EDUCATION

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<b>Dartmouth College</b> <i>Master of Engineering Management</i>	Hanover, NH, USA Dec 2023
<b>Carnegie Mellon University</b> <i>Master of Science in Mechanical Engineering, 4.0/4.0</i> Selected coursework: Mobile Robots, Bioinspired Robot Design & Experimentation, Robot Dynamics & Analysis.	Pittsburgh, PA, USA May 2022
<b>Warsaw University of Technology</b> <i>Bachelor of Science in Aerospace Engineering, 4.21/5.0</i> Selected coursework: Computer Science, Machine Design, Mathematical Analysis.	Warsaw, Poland Feb 2021
<b>The London School of Economics and Political Science</b> <i>The General Course, First Class Honours in 6/7 courses</i> Selected coursework: Innovation and Technology Management, Information Systems.	London, UK Jun 2020

## WORK EXPERIENCE

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<b>United Robots</b> <i>Robotic Software Development Engineering Intern</i> <ul style="list-style-type: none"><li>Improved the perception module on an <u>autonomous industrial cleaning robot</u> by solving accidents in edge-cases.</li><li>In an independent project, developed solutions allowing the robot understand in what state and environment it operates based on sensor inputs, including PointClouds, RGB, and depth images.</li></ul>	Warsaw, Poland Summer 2022
<b>Metalbud Company</b> <i>Design Engineering Intern</i> <ul style="list-style-type: none"><li>Collaborated on team projects of industrial food processing machines: worked with mechanical, structural and automation engineers to research and conceptualize solutions, build parts in CAD, and create technical drawings.</li><li>Identified an opportunity to improve profitability of the KN-90 industrial cutter; carried out an independent rotor design project, and <u>reduced production costs by over 60%</u>.</li></ul>	Podlas, Poland Summer 2019
<i>Manufacturing Engineering Intern</i> <ul style="list-style-type: none"><li>Automated production processes of <u>over 80 food processing machinery parts</u>, previously manufactured manually.</li><li>Created toolpaths in CAM following technical requirements for each part, processed instructions into G-code, and forwarded these programs for fabrication.</li></ul>	Summer 2018

## PROJECTS

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<b>Hummingbird Robotic Wing</b> <i>Carnegie Mellon University</i> <ul style="list-style-type: none"><li>As the <u>project manager</u>, led a <u>6-person team designing a robotic system</u> that mimics hummingbird flapping to investigate the manoeuvrability of hummingbird flight.</li><li>Performed an in-depth literature research, conceptualized the design of the robot, and orchestrated the development of the system by managing decision variables, purchasing, and manufacturing.</li></ul>	Spring 2022 Pittsburgh, PA, USA
<b>Real-time Object Detection of Grocery Products</b> <i>Carnegie Mellon University</i> <ul style="list-style-type: none"><li>Applied a "lightweight" neural network to object recognition of grocery products with a single-board computer and integrated speech capabilities.</li><li><u>Trained and tuned the yolov5 network in a cloud environment</u> – Paperspace – and implemented the network to Jetson Nano connected to a ZED camera.</li><li>Collected, prepared, and labelled over 600 images of 16 classes representing grocery products with Labellmg.</li></ul>	Spring 2022 Pittsburgh, PA, USA