**Dylan Colli**

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**Education**

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| Masters of Science in Robotics  University of Michigan  GPA:3.65 | Expected Graduation: May '24 |
| Bachelors of Science in Chemical Engineering*, summa cum laude*  University of Kentucky | May '18 |

**Relevant Employment History**

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| ***Arriver | Algorithm Engineer - Perception*** | Jan '21 - Jun '22 |
| *C++, Python, Agile, Sensor Fusion, Target Tracking* | Ann Arbor, MI |
| * Developed module and validation tooling for L2+ target tracking solutions. | |
| * Implemented point occupancy caching resulting in a 7% module speedup | |
| * Architected and implemented KPI exploration/visualization tool used in seven person team. | |
| ***Loyola University Chicago | Research Assistant (Remote)*** | Jul '20 - Dec '20 |
| *Python, Julia, Scientific Communication* | Ann Arbor, MI |
| * Improved parallelizability of in-house genetic algorithm through test-driven development. | |
| ***University of Kentucky | Research Assistant*** | Aug '19 - Jul '20 |
| *C++, RapidJSON, Python, Blender* | Lexington, KY |
| * Implemented RapidJSON C++ library to improve simulation input/output. | |
| * Increased user-friendliness of numerical model by implementing GUI using Tkinter package. | |
| * Developed visualization tool for model of heart contraction via Blender's Python API. | |
| ***University of Kentucky | Research Assistant - Image Analysis Team Lead*** | May '18 - Jul '19 |
| *Python, OpenCV, Event/Feature Detection, Linux* | Lexington, KY |
| * Architected a calcium spark event detection/quantification tool using Scikit-Image and SciPy. | |
| * Developed image analysis software for classification of cardiac subcellular remodeling. | |

**Projects And Selected Publications**

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| **Macro/Micronutrient Information System** | *C++, CMake, Linux, Qt5* |
| [github.com/dcolli23/ingreedyents](https://github.com/dcolli23/ingreedyents) |  |
| Motivation: Optimize diet via UPC lookup of ingredient nutrition information. | |
| * Built using CMake on Linux machine with minimalist Qt5 GUI. | |
| * Utilizes cURL library for nutrition information retrieval via REST API. | |
| **Calcium Spark Video Analysis** | *Python, Scikit-Image, Event detection* |
| [bitbucket.org/dcolli23/spark\_analysis](https://bitbucket.org/dcolli23/spark_analysis) | [doi.org/10.1113/JP277360](https://doi.org/10.1113/JP277360) |
| Motivation: Employ image analysis techniques for investigating cardiac cell signaling heterogeneity. | |
| * Developed and published algorithm for quantification of signaling events in 2D videos. | |
| * Implemented denoising and segmentation routines to detect regions of interest in images. | |
| **Biomedical Image Analysis** | *Python, OpenCV, Feature detection* |
| [bitbucket.org/pkh\_lab/matchedmyo\_git](https://bitbucket.org/pkh_lab/matchedmyo_git) | [doi.org/10.1016/j.bpj.2019.03.010](https://doi.org/10.1016/j.bpj.2019.03.010) |
| Motivation: To assess the subcellular remodeling elicited by heart failure in preserved tissue. | |
| * Designed, tested, and optimized published “MatchedMyo” software that employs image processing/analysis routines from the OpenCV Python module. | |
| * Improved feature detection rate by employing OpenCV’s CLAHE algorithm. | |