Jakub Wlodek: CS Student

Github: https://github.com/jwlodek

Cell: (631) 375-5966

j17wlodek@stonybrook.edu

553 Boxwood Drive

Shirley, NY, 11967

Education

- **Stony Brook University 2015 – present (class of 2019)**
  - B.S. Computer Science
  - B.S. Applied Mathematics and Statistics
  - United States History Minor
  - 3.77 GPA
  - Honors Computer Science Undergraduate program
- **Suffolk County Community College (SCCC) 2010 – 2015**
  - Attended SCCC throughout high school taking mathematics and computer science courses
  - 4.0 GPA

Experience

- **Brookhaven National Laboratory SULI/SURP Intern 2017 – present**
  - Worked on several projects at the National Synchrotron Light Source II (NSLS-II)
  - Wrote a python program for three-dimensionally reconstructing focus stacked images collected from a shallow depth of focus
  - Worked extensively with the EPICS control system and the area detector software used at NSLS-II beamlines, both integrating existing code into beamline operations, and writing new drivers and plugins.
  - Worked on debugging and repairing several existing drivers including the EPICS area detector driver for Dexela and Lambda detectors.
  - Worked on implementing improved user interface screens for NSLS-II users and the scientific community
- **Suffolk County Community College Educational Opportunity Program 2015 – present**
  - Worked as a mathematics and science tutor for students who were part of the Educational Opportunity Program (EOP) at SCCC
  - Tutored mathematics for students at varying levels ranging from introductory mathematics to calculus and beyond.

Skills

- **Several years of Object Oriented/Function Based Programming Experience**
  - Fluent: C, C++, Java, Python, HTML/CSS
  - Proficient: C#, Assembly, JavaScript
- **Several years of scripting language experience**
  - Fluent: Bash, Python
  - Proficient: Batch
- **Strong understanding of version control and test driven development**

- o Git, Github, Gitlab
  - o Mercurial
- **Thorough understanding of software development for multiple operating systems**
  - o Linux: Three years of experience
    - ▪ Debian, Ubuntu, Mint, Arch, and Red Hat distributions
  - o Windows
- **Experience with a variety of Database solutions**
  - o MySQL, MongoDB
- **Experience with scientific control system software frameworks**
  - o Experimental Physics and Industrial Control System (EPICS) and Area Detector
  - o Control Systems Studio (CSS)
- **Experience with data analysis and presentation frameworks**
  - o OpenCV/OpenGL
  - o Matplotlib/Python data analysis
- **Ability to work with scientific, networking, and computer hardware.**
- **Ability to work in a team oriented environment through version control and strong communication**
- **Ability to work independently and manage time efficiently**

Projects

- **Image Stacking and 3D reconstruction**
  - o Utilized Python, OpenCV, and OpenGL to create software for three dimensional image reconstruction from an image stack collected at a shallow depth of field.
  - o Software contributed to two publications: "On-Axis 3D microscope for x-ray beamlines at NSLS-II," and "Using sound pulses to solve the crystal harvesting bottleneck".
- **ADPluginBar/ADCompVision Area Detector plugins**
  - o Barcode reader plugin designed for sample automation using the OpenCV and zbar libraries
  - o Computer Vision plugin for real time image processing using the OpenCV library
- **ADLambda/ADDexela**
  - o Helped reconstruct existing Area Detector drivers to work with new libraries and OS.
  - o Added functionality to the ADLambda driver and deployed it on an NSLS-II beamline.
- **ADUVC**
  - o In progress project that will allow for the use of USB Video Class (UVC) cameras to be used with Area Detector and its associated plugins.

Accomplishments

- **Two publications (third is awaiting publication)**
  - o "On-Axis 3D microscope for x-ray beamlines at NSLS-II" – second author
  - o "Using sound pulses to solve the crystal harvesting bottleneck" – sixth author
  - o "Achieving 3D imaging through focus stacking" – first author (awaiting publication)
- **Dean's list at Stony Brook University (Fall 2015 – Spring 2018)**
- **University Scholars Inductee at Stony Brook University**
- **Phi Theta Kappa/Mu Alpha Theta mathematics honor societies**
- **Eagle Scout award (Spring 2015)**