Clayton Rayment

cw.rayment@gmail.com | 970-402-3299 | `https://github.com/simharry3`

SKILLS

PROGRAMMING
Fluent:
C/C++ • Python • LATEX • Linux
Familiar:
IDL • MATLAB • Java • SQL
JS • LUA • Assembly
Extensions:
OpenCL • CUDA • OpenMP • MPI
AstroPy

SOFTWARE
Astronomy
MaxIM DL • Deep Sky Stacker
CAD/CAM
SolidWorks • Autodesk Inventor
Misc
Microsoft Office Suite

EDUCATION

RENSSELAER POLYTECHNIC INSTITUTE
MS in Computer Science
May 2018 | Troy, NY
Department of Computer Science
GPA: 3.34 / 4.0

BS in Applied Physics
May, 2016 | Troy, NY
Conc. in Computational Astrophysics
Department of Physics, Applied Physics, and Astronomy
Dean's List (7/8 Semesters)
GPA: 3.27 / 4.0

COURSEWORK

GRADUATE
Robotics I
Computer Operating Systems
Parallel Computing
Computer Graphics
Design and Analysis of Algorithms
Graph Theory

UNDERGRADUATE
Computer Science:
Data Structures
Programming in Java
Parallel Computing for Engineers
Foundations of Computer Science
Computer Organization
Physics:
Quantum Physics I/II
Electromagnetic Theory
Theoretical Mechanics
Observational Astronomy
Astrophysics

EXPERIENCE

MILKYWAY@HOME | Researcher
Aug 2014 – Present | Troy, NY
Work with Dr. Heidi Newberg on MilkyWay@Home, a distributed computing project with a user base of over 20,000 active users, simulating dwarf galaxy tidal stream formation. Research focused on parallelizing large-scale n-body calculations to run on GPU compute devices using OpenCL.

HIRSCH OBSERVATORY | Operator
Jan 2016 – Present | Troy, NY
Operator/Keyholder of the Hirsch Observatory. General responsibilities include operation of the 16" telescope, several smaller telescopes, and Observatory dome during public observing. Special responsibilities include CCD operation, data collection and reduction, and training members on CCD and telescope operation.

RENSSELAER POLYTECHNIC INSTITUTE | Graduate TA
January 2017 – Present | Troy, NY
Graduate Teaching Assistant for Stars, Galaxies, and the Cosmos, Intro to Astronomy and Astrophysics, and Observational Astronomy. Assisted with course preparation and execution (Grading, proctoring, leading recitation, running night labs).

AUTOZONE | Shift Manager
March 2016 - Aug 2016 | Troy, NY

AIMS COMMUNITY COLLEGE | Robotics Instructor
Summer 2014, Summer 2015 | Longmont, CO
Taught elementary through middle school students robotics using the LEGO Mindstorms robotics platform. Used both NXT and EV3 kits, and facilitated a learning environment appropriate for the age group.

WOODWARD INC. | Engineering Intern
May 2013 - Aug 2013 | Fort Collins, CO

EXTRACURRICULAR

RENSSELAER SPORTS CAR ASSOCIATION | President
Aug 2014 – Aug 2016 | Troy, NY
Presided over an institute-funded club which hosted autocross events and car meets on campus. Managed several officers in the club, as well as oversaw event planning and operation.

RENSSELAER STUDENT AUTO SHOP | Manager
Aug 2014 – Dec 2017 | Troy, NY
Managed shifts at a student-run on-campus auto shop. Helped customers diagnose, repair, and prevent future problems. Frequent operation of heavy equipment such as a 10,000lb automotive lift, and machining tools. Large scale project planning and execution was also common.

PROJECTS

AMATEUR ASTRONOMY
Experience with several telescopes, tracking software, and imaging with DSLR, QSI 600, and SBIG 800 series CCDs. Used Python and IDL for astronomical data reduction, including quasar detection and asteroid tracking.

COMPETITIVE ROBOTICS
VRC Team Captain Captain of VRC team from 2008-2011. Qualified for, and attended World Championships during all three seasons. Recieved Build Award at World Championships for the 2011 season.
AVC Team Captain Captain of team competing in SparkFun's Autonomous Vehicle Challenge. Constructed 1/10 scale RC buggy capable of autonomous navigation using GPS, Compass, and tactile feedback.