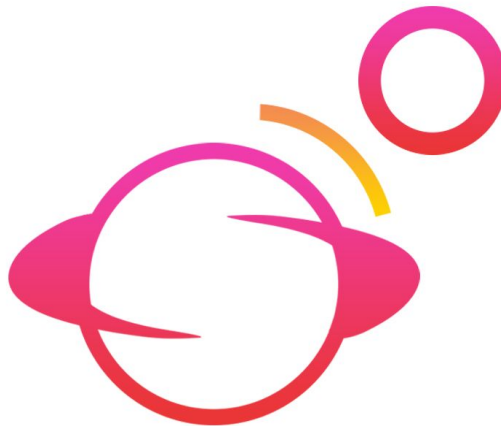

Team Inventory

09/27/18

**Paired Planet Technologies
and
Lowell Observatory**

Mentor:
Isaac Shaffer

Team:
Zach Kramer, Brian Donnelly, Matt Rittenback



The purpose of this team inventory document is to briefly introduce the members of our team. The following pages briefly outline the training, skills, and relevant experience of each team member.

Zach Kramer

Majors: Computer Science, Modern Languages (German)

Hometown: Muskegon, MI



Education:

I'm currently in my fifth year of university, one of which I spent abroad.

- *Desert Edge High School* | Goodyear, AZ | **3.9 GPA**
- *Northern Arizona University* | Flagstaff, AZ
 - Emphasis in Global Science and Engineering
 - Most relevant upper-division courses: Algorithms, Software Engineering, Large Scale Data Structures
- *Hochschule für Technik und Wirtschaft Dresden* | Dresden, Germany
 - One year ago I moved to Germany to advance my studies and have just returned.

Work Experience:

My work experience generally revolves around machine vision and scientific computing.

I started at Cognex Corporation, for 3 full-time internships of 4-6 months each:

- *Build Engineer* | Portland, OR | **Python, Perl, C++**: Developed the infrastructure for a production continuous integration solution and then integrated and improved existing nightly build scripts into it. Also implemented machine vision algorithms.
- *DevOps & QA* | Portland, OR | **Python, C#, XML**: Integrated local regression test framework into my production CIS and then optimized it for superior performance and output (also included some parallelization).
- *Software Developer* | Jena, Germany | **C++, CUDA, Qt**: Ported PC-based 3D imaging algorithms to embedded Linux platform, created network-based API, and optimized core algorithms for 4x performance improvement.
 - This was a longer internship and involved collaboration with multiple doctorates in Germany, including extensive work in developing and optimizing algorithms to solve nonlinear optimization problems.

I've also worked part-time for the United States Geological Survey for 2 years:

- *Software Developer* | Flagstaff, AZ | **R, C**: Implemented new features, data sets, and calculations into a soil water balance model (including piping data between code bases). Worked directly for scientific experts in the field.

Skills:

My programming skills are bolded in my work experience, but some highlights are:

- I have strong experience in R and Python, and very strong experience in C and C++.
- I also have very strong experience in version control (mostly Git) thanks to my time as a build engineer, DevOps engineer, and just my time spent working professionally.
- A rarer skill I picked up is developing in CUDA, which came from optimizing subpixel interpolation.

Other interests / Personal information:

I'm an avid rock climber, hiker, and traveller. During my time abroad I managed to visit nearly every European country. I chose to live in Germany to expand my cultural knowledge and am planning on returning after my graduation.

Brian Donnelly

Major: Computer Science

Hometown: Santa Barbara, CA



Education:

I have spent almost 7 years in college, and have had a diverse engineering education.

- *Webb Schools of California* | Claremont, CA
- *Northern Arizona University* | Flagstaff, AZ
 - Emphasis on Scientific Computing and GPGPU Programming
 - Most relevant upper-division courses: Algorithms, Software Engineering, Parallel Computing
- *Webb Institute of Naval Architecture and Marine Engineering* | Glen Cove, NY
 - I started college double majoring in Naval Architecture and Marine engineering in 2011 and I decided to switch after a few years and study computer science.

Work Experience:

Most of my work experience revolves around Naval Architecture but most of the skills I gained apply to every type of engineering.

Horizon Shipping (4-months Sea Tour) :

- *Cadet* | Pacific Ocean: Ran navigation and docking line management when on the bridge watch. General engine maintenance and replacing failed equipment. Cargo management at port in Honolulu, San Francisco and Los Angeles..

General Dynamics NASSCO (4-month Internship):

- *Ship Fitter* | San Diego, Ca: Worked as a welder, cutter and grinder in the ship fitters repair yard on US Navy contracts. Worked with Navy personal to fix ship board problems and do general maintenance.

NAU Cline Library (1-year part-time job):

- *Technology Assistant* | Flagstaff, AZ: Ran a set of twenty 3D printers, and managed other prototyping hardware and software. Maintained over 100 terminals and computers, as well as various recording and creative studios. Worked directly with clients and staff to solve any computer problems.

Skills:

I have a huge variety of skills and have learned how to pick up new skills quickly and efficiently, below are just some more computer science related skills.

- I have strong experience in C and python
- I also have a strong base in mathematics, physics and engineering.
- I do independent research in CUDA and optimising similarity searches by exploiting GPGPU hardware architecture.

Other interests / Personal information:

I love reading and keeping up with scientific news. I am a huge chess fan, and love other strategy games. I also enjoy spending as much time at sea as I can manage when not in school.

Matt Rittenback

Major: Computer Science

Hometown: Surprise, AZ



Education:

I am currently entering my fourth year at NAU as a undergraduate student.

- *Imagine Prep @ Surprise* | Surprise, AZ | **3.6 GPA**
- *Northern Arizona University* | Flagstaff, AZ
 - Most relevant upper-division courses: Algorithms, Software Engineering, Principles of Languages

Work Experience:

My work experience has involved working with peers to provide technical assistance and improve existing technological systems.

Arizona Game and Fish Department (full-time internship, 6 months):

- *Information Technology Intern* | Phoenix, AZ : Redesigned the internal support ticket system for the department into a more user-friendly version. Also, helped run QA tests for the department's website.

Skills:

As I don't have much programming experience outside of school, most of my skills are from different courses I've taken so I have a decent pool of languages that I've learned.

- Most of my experience involves web applications and web development, involving working with web frameworks like Django and Node.js. I gained this experience from working on larger software projects in school.
- I have modest experience with C, C++ and Java from both in a academic setting and self education.

Other interests / Personal information:

My hobbies include reading mostly fantasy books, skill toys and the occasional video game. Although I may not know the most about astronomy, I love learning new things about it whenever I get the chance. I also find Computer-Human interaction fascinating and often think about how users will interact with software.