

# Career Exploration Report

## Robotics Engineer and IT Analyst

by Nathaniel Arnow, Technical Reading & Writing, DRSS

### ABSTRACT

This career exploration report documents two potential careers and four possible internships for those careers. Large amounts of research were conducted, combing through sites such as the U.S. Bureau of Labor Statistics and the O\*NET Occupation Handbook. The results of this research have been collected in two reports, each including an overview, pathway for education, and an outlook in each career, along with the potential internships to provide skills and experience in their respective fields. After an internship is located, the next steps will be to schedule the internship and gather knowledge and skills to start working in this field.

## TABLE OF CONTENTS

Overview.....	3
Essential Questions .....	3
Potential Careers & Rationales .....	3
Potential Career 1.....	<b>Error! Bookmark not defined.</b>
<i>Possible Internships for Potential Career 1</i> .....	4
Potential Career 2.....	4
<i>Possible Internships for Potential Career 2</i> .....	5
Resources.....	5
Reflection.....	6
LogBook .....	6

# CAREER EXPLORATION REPORT

## OVERVIEW

The purpose of this document is to report the research process of Nathaniel Arnow during his career exploration in Technical Reading and Writing at the Dayton Regional STEM School during the 2024-25 school year. The following sections document essential questions used to begin the career exploration process, potential career(s) and rationale(s) for choosing those career(s), an overview of the research process used during Nathaniel's career exploration, resources found and used during the process, a resolution, and a reflection of the process as well as a daily logbook of all tasks completed.

The following Driving Question was used to guide this career exploration process: How can I locate a potential internship site, college, potential career by conducting extensive independent research?

## ESSENTIAL QUESTIONS

Throughout the career exploration research process, the following questions were asked:

- WHAT KINDS OF COLLEGE PROGRAMS ARE AVAILABLE FOR THESE CAREERS?
- WHAT LEVEL OF DEGREE IS NEEDED TO START WORK IN THESE FIELDS?
- WHAT SKILLS ARE REQUIRED TO START WORK IN THESE FIELDS?
- WHAT SKILLS WILL BE LEARNED AFTER WORKING IN THESE CAREERS FOR LONGER TIME PERIODS?
- WHERE ARE PROFESSIONALS IN THESE FIELDS LOCATED GEOGRAPHICALLY?

## POTENTIAL CAREERS & RATIONALES

This section provides a comprehensive list of potential future careers as well as rationale for choosing those careers.

## ROBOTICS ENGINEER

Wherever there exists manual labor, there exist people. Many of these people are spending their time and energy finding ways to do the job just a little quicker, just a little easier. Many major companies that rely on manual labor have also been spending time and energy finding ways to increase speed and efficiency while producing higher quality products. One way that companies have been accomplishing this for decades is through production automation. The type of automation mentioned above typically revolves around using machines or robots in some way or configuration. These systems must be set up, programmed and maintained by a trained professional, often a Robotics Engineer.

Professionals in this field are primarily based nearer to the western coast of the United States, there are a few areas nearer to the east coast, such as New York. The US Bureau of Labor Statistics (BLS) notes that someone in the field of robotics engineering will typically bring in from \$67k to \$150k per year, depending on experience and position.

According to O\*NET, robotics engineers will typically need a bachelor's degree to start their work. If one wants to pursue a higher position or wants to switch companies, a master's degree or associate degree may

be required (O\*NET). Additionally, regardless of the educational degree achieved, someone starting a job in robotics engineering will typically undergo some kind of internship or training program within the company they work for, due to the differences and intricacies between companies.

The field of Robotics Engineering is growing, and it is expected to grow by about 9% by 2030, which is a faster growth rate than nearly all other careers in the United States. This is partially because robots are becoming more prevalent in the automation industry. Additionally, there are new types of robots being developed according to new requirements and regulations for companies. This type of engineering professional could also be the one to design and build the robots, as well as operating and maintaining them.

Someone in the field of Robotics Engineering learns valuable life skills on the job, mainly working with other people and persistence. Through problems and hardships, they must persist, so that the companies they work for don't lose time or money when outages happen. During these outages, collaborating with other engineers can help reduce the time to fix the problems. All in all, Robotics Engineers are very necessary to keep manufacturing and automation companies running smoothly, and they're becoming all too common in our modern world.

---

## POSSIBLE INTERNSHIPS FOR ROBOTICS ENGINEER

### **Gosiger**

Address: 108 McDonough St, Dayton, Ohio 45402

Website: [www.gosiger.com](http://www.gosiger.com)

Phone: 937-228-5174

### **Yaskawa**

Address: 8628 Industrial Parkway, Unit A, Plain City, OH 43064

Website: [www.yaskawa.com](http://www.yaskawa.com)

Phone: 614-733-3200

## IT ANALYST

Since the dawn of digital technology, there have been issues and bugs with systems, software and hardware. For most users, these issues don't fix themselves automatically. The solution for this: people who know more about the systems, software and hardware than the typical user knows. These Information Technology (IT) professionals must be ready to diagnose, research, test and implement new solutions for users, so their work can be done effectively and efficiently. These IT professionals need to be informed with new and existing issues that may arise and cause major problems or outages within their company.

The typical IT professional may not interact with many individual users, but their impact, depending on the company, could be extremely wide. For example, if an IT professional is effective in their field, they could be responsible for preventing a company-wide outage that, unbeknownst to the users, could have saved the

company a large amount of time and/or money. According to the Bureau of Labor Statistics (BLS), typical IT professionals bring in anywhere from ~\$60,000 to ~\$150,000, depending on position and time spent at a particular company.

These high-paying positions don't come without extensive education and training, however. A typical starting position in the IT field will require at least a bachelor's degree, with some higher positions requiring a master's degree. On top of the education requirements, one should expect an internship or shadowing experience prior to being hired full-time.

The IT space is always growing. With newer and more complicated systems being implemented along with different ways of using existing technologies, there are many areas and fields that need IT professionals to manage systems and solve problems that may arise in the workplace. Within the next 10 years, the IT space is expected to expand an additional 356,700 openings each year due to retirement and overall expansion in this field (BLS).

The field of IT is always going to be needed, as long as humans still interact with computers. Although the possibilities are slim, if our modern society reaches a point in development where computers are 100% self-reliant, then the demand on IT professionals and infrastructure will be reduced or even possibly eliminated. For now, however, IT is a growing field, especially with new technologies and new ways of using digital technologies are being developed, discovered and diagnosed every day.

---

## POSSIBLE INTERNSHIPS FOR IT ANALYST

### **Dayton Regional STEM School**

Address: 1724 Woodman Dr, Kettering, OH 45420

Website: [www.daytonstemschool.org](http://www.daytonstemschool.org)

Phone: 937-256-3777

### **CareSource**

Address: 230 N. Main St, Dayton, OH 45402

Website: [www.caresource.com](http://www.caresource.com)

Phone: 937-224-3200

## RESOURCES

This section provides a list of resources found during the career exploration research process (can include resources used to explore your career fields, possible internships, etc.).

- Digital.gov. (2020, May 15). *Understanding robotic process automation*. Digital.gov <https://digital.gov/guides/rpa>
  - Provides skills/responsibilities on the job
- IEEE. (n.d.). IEEE Robotics & Automation Magazine. IEEE Robotics & Automation Magazine. <https://ramagazine.ieee.org/>
  - Provides salary, career outlook, skills learned from the job
- O\*NET. (n.d.). 15-1232.00 - Computer user support specialists. O\*NET OnLine. <https://www.onetonline.org/link/summary/15-1232.00>
  - Provides salary, career outlook, skills/responsibilities on the job

## REFLECTION

This section provides the reflection and resolution to Nathaniel's career exploration.

During the past 5 or so years of my life, I have always been interested in how computers work. Ever since I could use electronics, I would take every opportunity to take them apart and see how they work. I also had no idea what I wanted to do with my life, I only knew it had to be something having to do with computers. I also have been told by people that I have good people skills and can explain certain topics well, given that I know what I am talking about. I also have a desire to make broken things work again, and the career of IT Analyst appeals greatly to me. I also love working with automated machines, as I have dedicated a large part of my life to expending effort to eventually spend less. I also enjoy fine-tuning processes and being precise, so having a job that requires precision appeals to me as well. Concluded from my research, I have determined that the internship that would be most impactful to me would be for IT analyst, and I would prefer to complete this internship at the Dayton Regional STEM School. In the near future, I will contact them for an internship opportunity.

## LOGBOOK

The following logbook was kept during Nathaniel's career exploration process. It details the tasks completed during this process including sources consulted, essential questions asked and answered, as well as any other information collected each day.

Date	Tasks Completed
9/11	Reverse-outlined student sample CER
9/13	Set up research method and located sources
9/17	Started one-sentence summaries
9/18	Continued one-sentence summaries/annotations
9/19	Continued summarizing sources
9/23	Started drafting Career 1
9/24	Continued drafting Career 1
9/25	Continued drafting Career 1
9/30	Finished drafting Career 1 and received feedback
10/1	Revised Career 1
10/2	Outlined Career 2
10/3	Started compiling sources for Career 2
10/4	Finished compiling sources for Career 2
10/7	Conducted research for Career 2
10/8	Started drafting Career 2

---

<b>10/10</b>	Continued drafting Career 2
<b>10/11</b>	Continued drafting Career 2

---