



The Founding of 4ai

FOR AI. FOR LOVE.



Cathy Hou¹, Ashley Poon¹, Andy Poggio²
¹Henry M. Gunn High School, ²SRI International



INTRODUCTION

One billion people, or 15% of the world's population, experience some form of a disability—a physical or mental impairment (McClain-Nhlapo, 2018). With low levels of employment, people with disabilities are often thrust into poverty and unable to pay for the often costly medical attention they need due to their disabilities. This creates a vicious cycle, one that completely ignores the needs and rights of those with disabilities. Additionally, it overlooks the amount of talent and potential present within this population. If tapped into, their participation in the economy would benefit everybody.

The growing field of artificial intelligence, or AI, is a branch of computer science that deals with the simulation of intelligent behaviors in computers and has the potential to employ people with disabilities. Currently, this is a field that lacks diversity and employs few people with disabilities (Silver, 2018). When people think about AI, they tend to envision tomorrow's innovators. The word disability, however, has a negative connotation and infers that someone who has a disability does not possess the intellect or ability needed to work in a field such as AI. However, this is simply not the case. Talent is distributed evenly across different groups of people, but opportunities are not.

WHO WE ARE

4ai is a startup labeling nonprofit based in Palo Alto, California.

Mission Statement: 4ai aims to provide jobs to people with disabilities and make advancements in the field of artificial intelligence.

SOLUTION

4ai exclusively employs people with disabilities to label images that are sold to AI companies to help develop their machine learning algorithms. Software was developed that enables employees to perform the task of labeling images, a crucial step for training computer vision algorithms, a specific branch of AI that recognizes objects, shapes, and movements. The 4ai process is simple. First, employees are trained to use the 4ai software. Next, customers are recruited, and 4ai works with them to determine specific details regarding the image files needed. Then, trained employees tag these files with a cross-check system that ensures the quality of the labels. Finally, the labeled files are sent to the customer, billing is collected to pay for operating expenses, employees, and expansion.

GRAPHICS

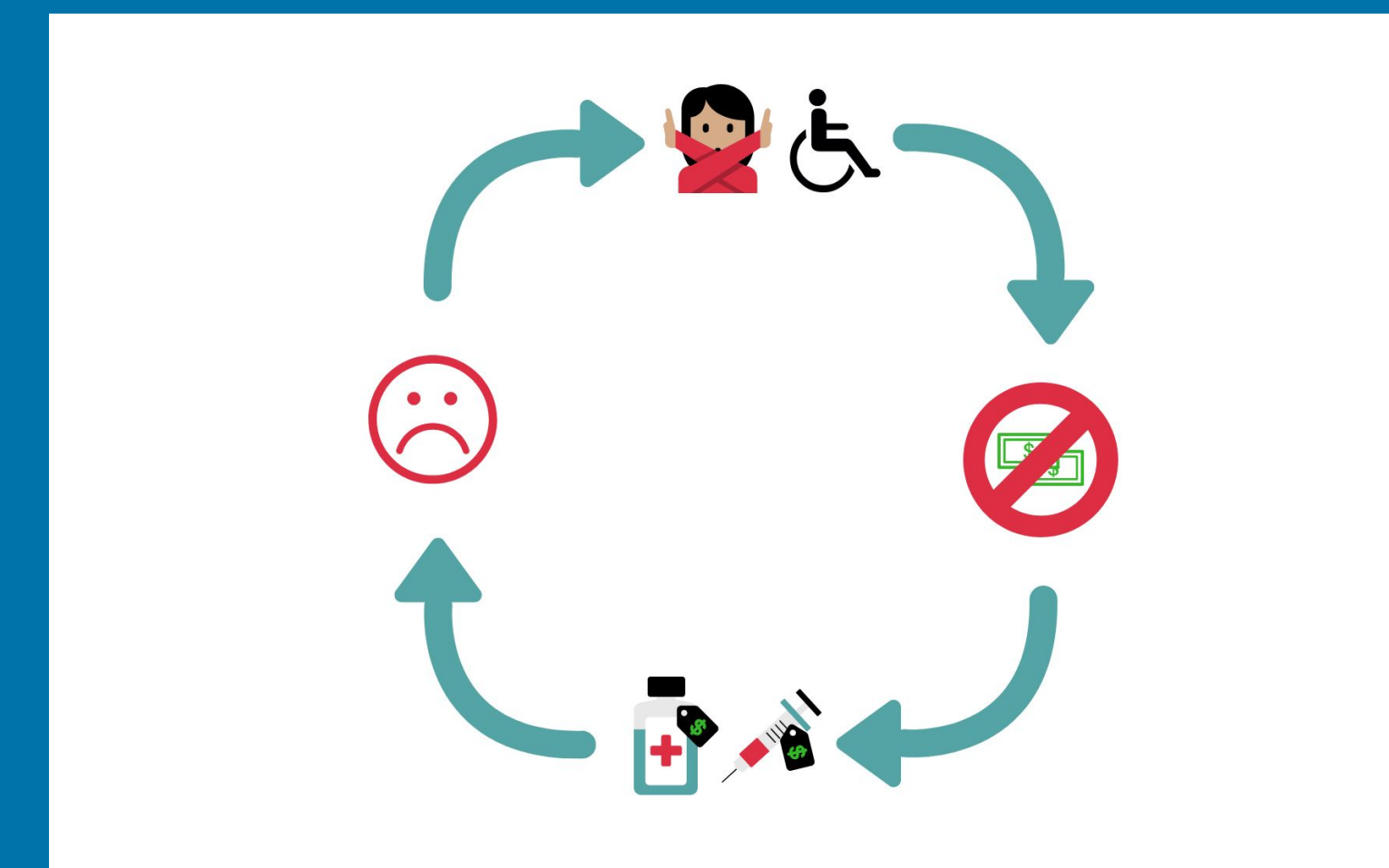


Figure 1: The vicious cycle present in society that impacts people with disabilities

Figure 2: The 4ai process

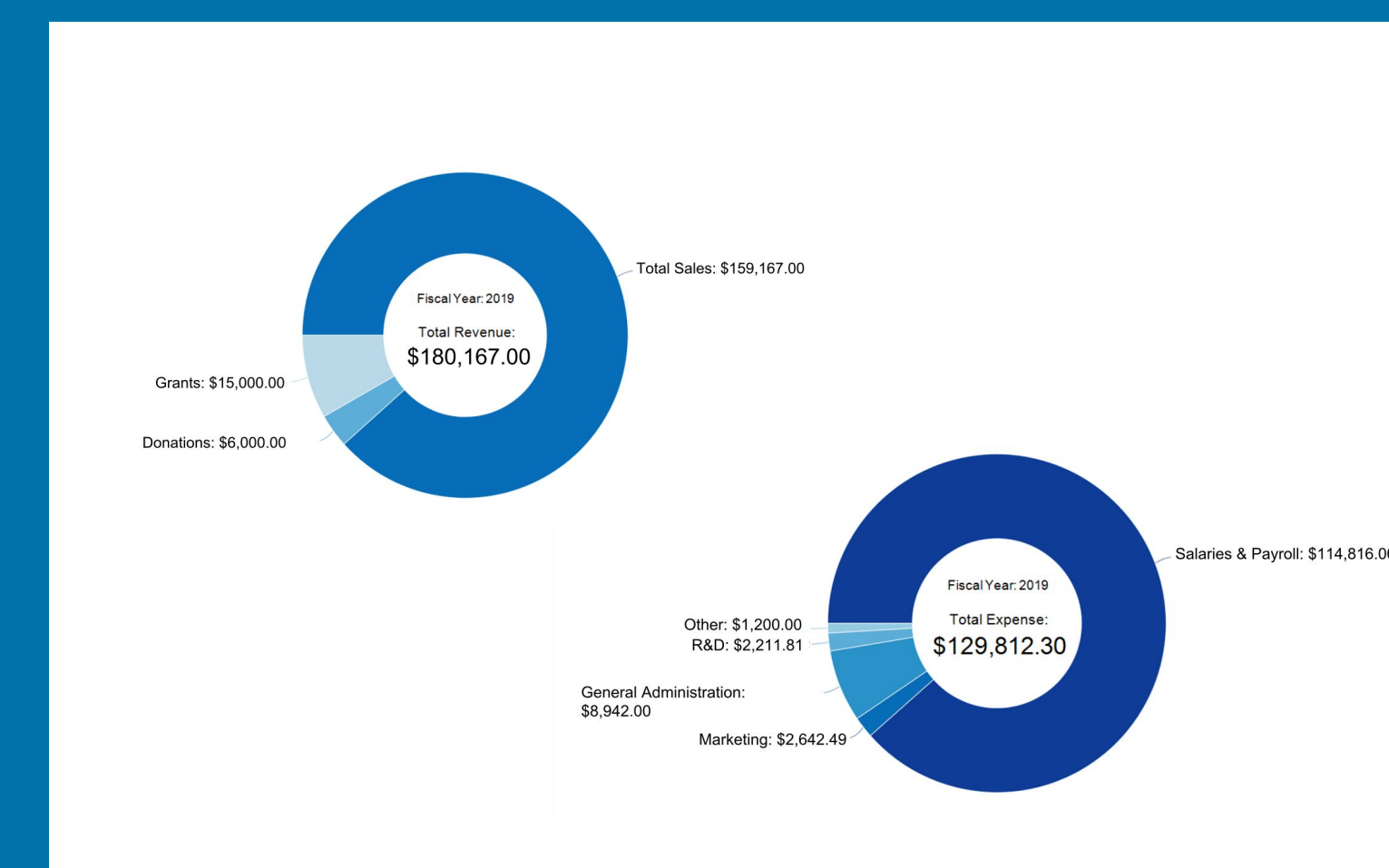
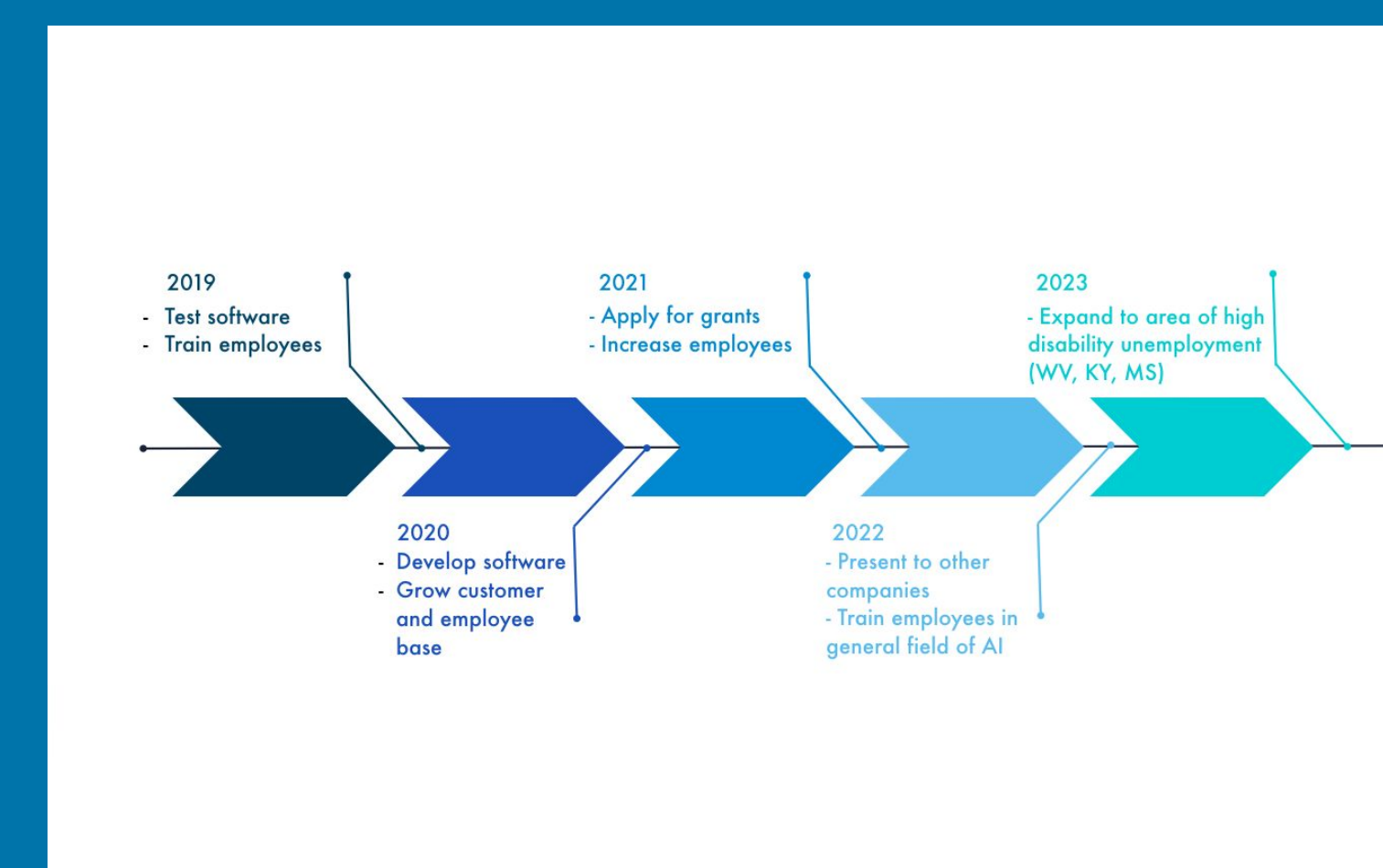


Figure 3: Breakdown of revenue and expenses

Figure 4: A timeline of 4ai's planned future actions



PLAN OF ACTION

Throughout the year, the 4ai team worked on legally implementing 4ai as a nonprofit. The Name Request Form was filed for "4ai" in December 2018, and the Articles of Incorporation to establish the nonprofit's existence were filed in January 2019. The company bylaws were drafted, a board of directors was formed, an Employer Identification Number was filed for, and the team is working on obtaining 501(c)(3) status. Funds were raised through GoFundMe (www.gofundme.com/4ainonprofit) and grant applications, including the City of Palo Alto's Think Fund.

On the technological side, the 4ai team developed a web application that serves as an interface for employees to tag images (www.4ainonprofit.org). The application was developed using Python, a Flask interface, and MySQL databases to build the web-app, and HTML and CSS to design the website. In addition, a domain was purchased and the web app was hosted with PythonAnywhere. A local company, Labelbox, also allowed 4ai to use their software for free under an educational license.

In terms of better understanding how to be a disability friendly corporation, we volunteered at Abilities United, a local organization that provides a variety of services for those with disabilities in Palo Alto, CA. Currently, 4ai is working on forming a partnership with Abilities United for additional support and to test our software.

Future Actions:

The AI field will be under heavy development for at least ten years, ensuring the organization's sustainability. We hope to reach three new states with low levels of employment for the disabled by 2023. Establishing the organization in multiple communities will help spread 4ai's positive message of the benefits of employing people with disabilities to other companies in the area. The 4ai team is also developing software to handle additional types of labeling requirements, such as audio labeling, to keep up with the growing demands of artificial intelligence.

ACKNOWLEDGEMENTS / REFERENCES

A special thanks to Labelbox, Abilities United, our mentor, Andy Poggio, and our teacher, Mrs. Wilson, for making this project possible!

Works Cited:

Abate, Tom. (2016, September 1). *How will driverless cars and other applications of AI affect society?* Retrieved October 4, 2018

Chan, E., & Takagi, G. (n.d.). *How to Start a California Nonprofit*. Retrieved October 8, 2018

McClain-Nhlapo, C. (2018, September 26). *Disability Inclusion Overview*. Retrieved October 8, 2018

Silver, David. (2018, February 21). *How Computer Vision Works for Self-Driving Cars*. Retrieved October 4, 2018

Stewart, J. M., & Schwartz, S. (2018, April 1). *Equal Education, Unequal Jobs: College and University Students with Disabilities*. Retrieved August 26, 2018

U.S. Equal Opportunity Employment Commission. (n.d.). *Disability Discrimination*. Retrieved October 28, 2018

www.4ainonprofit.org info@4ainonprofit.org

@4ainonprofit