(484) 788-3226
brown.ben.2019@gmail.com

Ben Brown
Rochester Institute of Technology

linkedin.com/in/bendoesai
github.com/bendoesai

June 8, 2024

Hiring Manager
Georgia Tech Research Institute
250 14th Street, NW
Atlanta, GA 30318

Dear Hiring Manager,

My name is Ben Brown, and I am a recently graduated student from the department of Electric and Microelectronic engineering at Rochester Institute of Technology. I'm seeking employment as an AI/ML Engineer at the Georgia Tech Research Institute. I believe that I have several specific attributes that would result in particularly synergistic employment in this position, and I would like to outline them below, in order of listing on the job description:

Minimum Qualifications:

- **Experience with machine learning research and implementation:** Despite my degree path, I've been tuning my academics toward machine mearning, data science, and artificial intelligence. I've pursued this through academic research, coursework, and multiple cooperative education experiences. I've had the opportunity to work with research professors across fields such as cybersecurity and human-computer interaction, and this has allowed me to observe and learn from their research processes while applying those skills to my own.
- **Experience with data science:** During my first co-op experience, I had the opportunity to enter a factory environment, where I was tasked with taking data from the past 7 years and using it to predict chemical concentrations during titanium manufacturing processes. I learned several different data science libraries like pandas, numpy, and scikit-learn and applied them to a complex time-series analysis task– skills that I carry with me into all of my further research and development.
- **Experience with Python (including numPy, sciPy):** Through my education surrounding deep learning and related computational techniques, I have gathered 4+ years of experience in Python. Learning to code efficiently, legibly, and consistently has been critical in my overall success in both research and production. In addition, I have exposure to several other languages through classes or related co-op work, specifically C/C++ in both high-level and embedded environments.
- **Experience with version control systems (Eg. Git):** After my first co-op experience, I began using Git and private GitHub repositories to store any project that required more than three files. This allowed me to easily transfer projects between devices, and get used to git's version control ecosystem at the same time. This allowed me to carry lessons I had learned from my own experimentation into future work experiences to accelerate my integration into new teams, and also push for better version control practices on teams that have not adapted them yet.
- **Demonstrated technical achievements in at least one relevant technical domain:** My most recent experience involves doing deepfake detection research at the DeFake project in the cybersecurity department at RIT under Dr. Matthew Wright. My research involved building frameworks to train deepfake detectors, and observe their robustness through adversarial attacks. This research is still ongoing, and I am continuing my work with the team post-graduation.
- **Excellent communication skills:** RIT engineering focuses heavily on laboratory classes, which means that students are required to write reports summarizing labs in nearly every class. Doing this has given me years of practice in communicating ideas from semiconductor processes to analog circuit design in a manner that is concise and accessible. This directly transfers to research and white-paper reports that I have worked on in industry.
- **Current enrollment in accredited program:**
  I am not currently enrolled in graduate education, however I do intend to pursue masters and doctorate degrees in the near future.

Preferred Qualifications:

- **Active Secret Clearance:** I do not have a security clearance, however I am a US citizen and have worked in defense in the past, so I forsee no issues in obtaining one for work at GTRI.
- **Background in computer science, mathematics, physics, informatics, or engineering field:** My degree is electrical engineer-

(484) 788-3226
brown.ben.2019@gmail.com

Ben Brown
Rochester Institute of Technology

linkedin.com/in/bendoesai
github.com/bendoesai

ing, which means that I've taken classes in physics, computer science, hardware design, advanced mathematics, and statistics. This multidisciplinary background gives me a unique perspective on issues facing AI and security, and allows me to use that perspective to design equally unique solutions to engineering problems that are presented to me.

- **Experience with machine learning tools such as Tensorflow, PyTorch, and Scikit-learn:** My second year is when I was introduced to Dr. Jamison Heard while looking for robotics research in the department. This was the beginning of a long standing professional relationship that allowed me to learn and practice all the essential software used for AI/ML, including TensorFlow, PyTorch, scikit-learn, and the many supporting utilities required for them.
- **Experience leading research projects and teams:** During my senior year, I had the privilege to serve as team lead for RIT's engineering capstone project. I led a small team of 4 members and took lead roles in client communication, task mangement, and resource allocation. Together we developed a short-wave infrared detector that is affordable and portable and presented our designs at the CEIS symposium in April.

In short, being on the cutting edge of research and development is and always will be a primary motivation for my work. That is why I want to work at the Georgia Tech Research Institute, so I can push the boundaries of human knowledge in an environment of people that want the same. I enjoy facing problems that have never been solved before, and I learn voraciously in order to overcome obstacles that face me.

I'm excited to hear more about this AI/ML position. I believe that GTRI possesses everything that I need in order to grow into a successful researcher focused on the greater good. Please refer to my resume for further details about my skills and experience, and feel free to reach out to me with any other questions.

Thank you for your consideration,

Ben Brown