Coin Miner
Technical Report
CSC468

Michael Barto, Jason Blum, Shane Krause, Ian Lewis, Tanner Ragghianti

Version 0
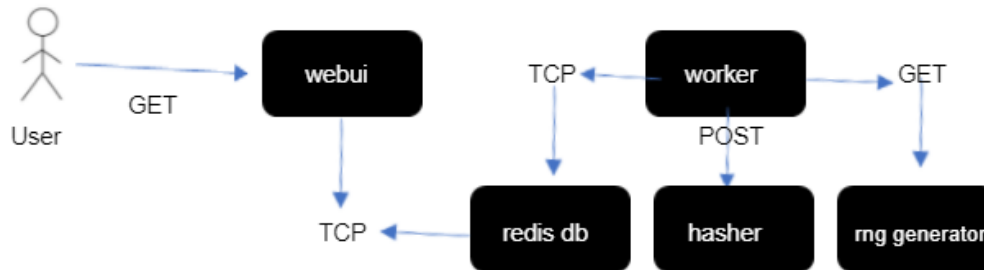February 5, 2022

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Team Description

Our team is composed of fellow students enrolled in the Computer Science program at West Chester University. We come from various backgrounds but share a common interest in pursuing a career in a multitude of categories ranging from software development and IT, to cyber security and network management. Due to our unique backgrounds we will be able to solve abstract problems using our intuitive abilities and acquire feedback from each other when knowledge gaps occur.

1. Introduction

1.1 Vision

The team vision for the coin miner is to not only ensure stability and a smooth deployment, but to improve the program efficiency while also minimizing problematic areas of the project. Ideally, we want our coin miner to be composed of three groups to keep the program simple and reduce complexity. The three groups will be the front-end, back-end, and database with the front-end containing the webui, the back-end containing the worker, hasher, and rng, and the database using redis. The following diagram is a visual representation of how this would work in our internet architecture.

2. Technical Requirements

The team has come up with a variety of ideas to address the technical requirements of the project. Firstly, we are going to have our well established core components interconnected to form our full stack coin miner. Secondly, we will utilize CI/CD services so we can update our webui in real time. Next, we will polish the webui to make it more modern and appealing to consumers. As well as the basic foundation components, the team will be utilizing more efficient services such as switching our database from redis to mysql and rewriting our hasher in python code. Finally, discussion will occur to contemplate a more complex redesign of the entire protocol if the team feels it is necessary.

Shane Michael Krause

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OBJECTIVE

My priorities and goals are to create long standing solutions, utilize my passion for improvement, and to enhance my knowledge and skill set in technical expertise. Another objective is to be involved in developmental activities such as one-on-one feedback sessions, industry tips, and performing in a dynamic work environment. I am experienced in a variety of technologies that allows me to be more intuitive when solving complicated technical issues and implementing impactful solutions.

EDUCATION

West Chester University, West Chester, PA
— *Computer Science BS (3.2 cumulative GPA, overall)*
— *Computer Security Certificate (NSA endorsed)*
September 2018 - May 2022 anticipated graduation date

Boyertown Area Senior High, Boyertown, PA
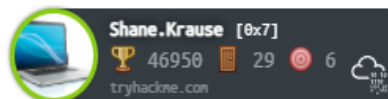— *High School Diploma*
September 2014 - June 2018
Graduated with Honors (3.2 GPA)

SOFTWARE AND PROGRAM SKILLS

At a young age, I knew my career would involve computers after building my own desktop PC at the age of 14. This created my attention to detail and focus to develop at a young age, which in turn boosted my work ability. My interest only increased resulting in my never-ending mission to learn as much as I possibly could about the inner and outer mechanisms of computers. In Computer Systems, I learned how to manipulate and represent information. After taking data structures & algorithms coursework, I was much more capable of working with large data sets. As a result of Computer Security and Ethics class, I started implementing extra security and a VPN on my devices. Other software/programs I am skilled in include but are not limited to:

- Kali Linux   CLI   MS Access   MS Excel
- SQL Query   VS Code   Tryhackme.com Profile -

EXTRACURRICULAR

Executive member and Recording Secretary of Phi Gamma Delta Chapter - Chi Kappa
- Attended leadership academy in St. Louis at the HQ
- Constant coordination with other executive members to plan and finalize events
- Organized, attended, and spoken at both philanthropy and community service

WORK EXPERIENCE

West Chester Golf & Country Club, West Chester, PA - *Server and Event Planner*
December 2020 - October 2021

Organized and setup for large golf outings and other high-end events

Took drink and food orders while maintaining customer service and delivering the requested items to the customer

Assumed other positional roles when those employees needed the extra assistance

Bon Bon Sushi, West Chester, PA **-** *Delivery Driver*
June 2020 - November 2020

Delivered a wide variety of items to different addresses and different routes

Followed specific delivery routes in a fast-paced working environment, adhering to company standards of established timeframes

Loaded, unloaded, prepared, inspected and operated a delivery vehicle

Assisted in resolution of any client complaints or issues

Banana Republic, Limerick, PA - *Sales Associate*
April 2017 - August 2018

Responsible for the training and development of new junior sales associates

Implemented company up-selling strategies which included: recommending accessories and complementary purchases which aided the company to boost revenue streams.

Maintained oversight and financial accountability of assigned register

Maintained 100% reconciliation between the register amounts and daily income ledger with zero

findings

 Provided clear and consistent communication to supervisor and team during set meeting time frames

Our Place, Gilbertsville, PA - *Kitchen / Prep*
September 2015 – April 2017

Responsible for maintaining a clean and organized working environment in accordance with company standards
Assisted in ensuring the safety of food delivered to customers

Michael Barto

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PROFESSIONAL SUMMARY

6+ years of computer networking and programming education

EDUCATION

Computer Science, BS

West Chester University of Pennsylvania, West Chester, PA   08/2020 – Present

·   Current GPA – 3.3

·   Expected graduation: May 2022

Computer Science, AS

Delaware County Community College, Media, PA   09/2017 – 05/2020

Computer Networking & Digital Forensics

Delaware County Technical High School, Aston, PA   09/2015 – 05/2017

High School

Garnet Valley High School, Glen Mills, PA   09/2013 – 05/2017

WORK EXPERIENCE

Mr. Wizard Car Wash • Chadds Ford, PA   03/2016 – 08/2021
Shift Supervisor

·   Supervise attendants

·   Manage network maintenance and outages

·   Assist with equipment maintenance

·   Train new hires

·   Reconcile end of day financial status

Attendant

· Maintain facility cleanliness

· Assist with customer purchases

· Prepare vehicles for car wash entry

SKILLS

Hard

- MS Office Proficiency
- Programming Language Knowledge
  - (Java | Python | C | C# | UML | ML)
- Source Control
  - (Git | Github)

Soft
- Relationship Building
- Change Management
- Presentation Skills
- Problem Solver

Tanner Ragghianti
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Downingtown, PA 19335
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Profile:

I am a detail-oriented computer science major currently attending West Chester University. Aiming to leverage technical, problem-solving, and organizational skills to successfully find a job as an IT System Administrator.

Education:

Delaware County Community College

Associates in Computer Science

Graduation: May 2020

G.P.A.: 3.28

Related Coursework: Java Programming, C++ Programming, Data Structures & Algorithms

West Chester University

Bachelor's in computer science

Graduation: December 2022

G.P.A.: 2.91
Related Coursework: Computer Systems, Program Lang Concepts/Paradigm

Experience:

Darden Restaurants, Downingtown, PA   May 2018-October 2021
Certified trainer

Train new hires for their applied job to an ability level where they are competent enough to perform their daily tasks

Delaware County Community College, Media, PA   October 2019-Current
Peer Tutor/Professional Tutor

Assess student skill weakness, design and implement strategies to support understanding

Informal job experience

Experience helping other classmates in the past with understanding the material and with classwork.

Experience setting up and diagnosing small scale networks for personal projects

Skills & Abilities

Programming skills in C++ and Java

Experience with Hardware diagnostics

Microsoft office (Word, Excel, PowerPoint)

Ian Lewis

4334 Silverwood Street | Philadelphia, PA | (215) 380-0287 | lewis7033@gmail.com

Education

West Chester University of Pennsylvania, West Chester, PA

Bachelor of Science in Computer Science | December 2022

- GPA 3.4
  Related Courses:

Data Structures & Algorithms	Computer Systems
Computer Science III	Computer Security & Ethics
Calculus II	Software Engineering

Work Experience

Watson & Allard, P.C. | Information Technology Intern | August - December 2019

- Maintained a database and internal network
- Solved network and connection issues
- Assisted in creation of programs

Watson & Allard, P.C. | Legal Assistant | October 2016 - Present

- Communicates with clients to inform them on legal standings
- Collaborates with a team to achieve our goals
- Increased monthly profit

Activities

- Member, West Chester University Computer Science Club Fall 2019 - Present

Technical Skills

- Experience in Java and C programming languages
- Knowledge in operating systems Windows and Linux
- Experience in building computers
- Proficient in Microsoft Excel, Microsoft Powerpoint, Microsoft Word

Jason Blum

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jjsnblum@gmail.com

Summary

Computer Science major seeking an entry-level Software Engineer position. 5+ years experience with hands-on work and problem-solving in the workforce. High work ethic with the intent to learn and expand my skill set.

Work Experience

Planet Fitness | PA, Pottsville
Member Service Representative | 02/2021 - Present
- Greeted members to the front desk in a friendly manner.
- Trained newly hired employees on front desk procedures and business operations.
- Regularly cleaned machines/equipment when needed Respond to customer inquiries quickly via phone, email, or in-person.

Bentz, LLC | PA, Pottsville
Swimming Pool Installer and Servicer | 03/2019 - Present
- Communicated with customers to ensure that pool type, dimensions, and location meet customers' interests.
- Relocate debris to the appropriate location.
- Assemble and align the wall panel with given uprights, track, ledges, and liner.
- Organize the jobsite for efficient use.
- Seek out and repair damaged liners.
- Gather measurements for liner dimensions.
- Assemble skimmer box, given pump, and neatly connect pipes to needed location.

Yuengling | PA, Pottsville
Machine Operator | 04/2018 - 08/2018
- Operated the bottle/can depalletizer machine to ensure proper runtime.
- Maintained safety precautions in an event of an error.
- Worked in communication with the surrounding employees to notify them of production details. Perform routine maintenance and clean machines nightly to ensure smooth operations.

Skills

Knowledge with languages such as Java, C++, HTML.
Efficient with Microsoft Word and Excel.
Organizational Skills.
Good time management.
People friendly, easy to communicate with.

Education

West Chester University of Pennsylvania | West Chester, Pennsylvania
Computer Science, B.S
GPA- 3.4

Pennsylvania State University - Schuylkill | Schuylkill Haven, Pennsylvania
Computer Science, B.S
GPA- 3.6