AARON MACKENZIE MISQUITH

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PROFESSIONAL SUMMARY

I am a problem solver, and nothing excites me more than finding innovative solutions to complex issues. Whether it's developing efficient algorithms, optimizing user experiences, or troubleshooting bugs, I am
constantly honing my skills to deliver top-notch software solutions. I am seeking to use my superior knowledge of Social Media Marketing and my advanced Programming Skills to serve your research as a research assistant.

EXPERIENCE

Under Dr Simone Ludwig in North Dakota State University | Fargo, North Dakota

February 2024 - Current
Research Intern

- Developed and implemented evolutionary algorithms for optimization, classification, and feature selection.
- Parallelized evolutionary algorithms (e.g., PSO, Glowworm Swarm, Bison Algorithm, Genetic Algorithm, Bat Algorithm, Firework Algorithm, and Fireflies Algorithm) using Apache Spark for distributed optimization tasks.
- Parallelized evolutionary algorithms (e.g., PSO, Glowworm Swarm, Bison Algorithm, Genetic Algorithm, Bat Algorithm, Firework Algorithm, and Fireflies Algorithm) using Apache Spark for distributed optimization tasks.
- Utilized PySpark library and Hadoop Distributed File System (HDFS) for scalable processing of large datasets.
- Optimized Spark clusters for high-performance distributed computing of evolutionary algorithms.
- Implemented over 12 traditional feature selection techniques for high-dimensional data.
- Employed NumPy, Pandas, and scikit-learn for data manipulation, analysis, and integration with machine learning techniques.
- Proposed and implemented a unique Bison algorithm for classification.
- Developed 1 unique algorithm and implemented 2 unique feature selection algorithms based on PSO (Particle Swarm Optimization) that's never been implemented before.
- Applied evolutionary algorithms for optimization to solve complex benchmark problems (e.g., Schwefel, Ackley).
- Conducted rigorous experimentation and evaluation to compare the performance of parallelized algorithms against traditional implementations.

Under Dr. Swarnalatha Ks | Banglore, Karnataka, India

September 2022 - April 2024
Trading Autobot

- Automated Trading Bot: Designed and implemented a sophisticated trading bot to execute trades automatically based on predefined algorithms and real-time market data.
- Algorithm Development: Created and optimized trading algorithms leveraging technical indicators and statistical models to maximize profitability and minimize risk.
- Backtesting and Optimization: Conducted comprehensive backtesting using historical market data to validate trading strategies and ensure robustness in TradersView(open-source trading strategy back tester).

SKILLS

- Machine Learning(Evolutionary Algorithms, Reinforcing Algorithms, Supervised and unsupervised learning, and Neural networks)
- Apache Spark(PySpark,HDFS)
- Programming Languages(Java, C++, Python, JavaScript)
- Web Development(HTML, CSS, JavaScript, Node.js)
- Mobile App Development- Android (Kotlin)
- Database Management(SQL, MySQL, MongoDB)
- Backend(object-oriented programming, Data-structures, Data analysis and design)
- PPT Designing: Proficiency in creating visually compelling PowerPoint presentations, utilizing
- PPT Designing: Proficiency in creating visually compelling PowerPoint presentations, utilizing layouts, graphics, animations, and transitions effectively.

- Automated Trading Execution: Automated the complete trading process from signal generation to order execution, ensuring rapid response to market conditions with real money.
- Performance Monitoring and Adjustments: Implemented real-time performance monitoring and made dynamic adjustments to improve trading efficiency and outcomes.
- Risk Management: Developed and incorporated risk management protocols to safeguard investments and comply with trading guidelines and implemented them in a risk matrix model.

EDUCATION

Pre University - PCMB(Physics, Chemistry, Math, and Biology)
Nitte Pre University, Banglore,INDIA

Bachelor of Technology(B.Tech) - Information Science and Engineering
August 2024
NITTE MINAKSHI INSTITUTE OF TECHNOLOGY, Banglore, India

LANGUAGE

English - Fluent
Hindi - Fluent
Kannada - Fluent
Konkani - Native

PROJECTS

- **Parallelized Evolutionary Algorithm Project**
  - Implemented parallel evolutionary algorithms (PSO, Glowworm Swarm, Bison Algorithm, Genetic Algorithm) using Apache Spark and PySpark.
  - Leveraged HDFS for distributed processing of large datasets.
  - Conducted performance evaluation against traditional implementations.
- **Trading Autobot**
  - Developed a trading bot using Zerodha API for automated trade execution based on AI-driven algorithms.
  - Implemented risk management and real-time performance monitoring.
- **Recipe Sharing Platform**
  - Full-Stack Development
  - Built backend with MongoDB Atlas and frontend with JavaScript, Node.js, CSS, and HTML.
  - Hosted locally on localhost:7077 for development and testing.
- **Drone Project**
  - Designed a drone using Arduino Uno, programmed in C++.
  - Implemented counter-rotating propellers for stability.
- **Simple Search Engine**
  - Developed a search engine using Python, Flask, BeautifulSoup, and Scrapy.
  - Integrated NoSQL database for indexed data storage.
- **AR App for Demonstrating Exercise Form**
  - Created an AR app with Unity and Vuforia to show correct exercise form.
  - Integrated 3D models and real-time motion tracking.
- **Personal Assistant**
  - Developed a virtual assistant using Python and GPT-4.
  - Integrated Whisper for voice interaction and task automation.
- **Simple Brute Force Attack**
  - Created a Python brute force attack script for login systems.
  - Utilized multithreading for efficiency.
- **Automated Subscription Manager (using Indian UPI System)**
  - Developed a subscription manager with UPI integration for recurring payments.
  - Built backend with Node.js and Express, and frontend for user management.

ACHIEVEMENTS

- **Student Council President** (NITTE PU College 2019)
- **International B-plan Candidate**(held in Singapore 2022)
- **National B-plan runner-up**(held in IIT Bombay 2021)
- **Regional B-plan Winner**(held by LWT Bangalore 2021)
- **Amateur Scientist Semi-finalist** (National level under 18 robotics competition conducted by Infosys in PES University Bangalore 2015)

EXTRA-CURRICULAR ACTIVITIES

- **High-school football team**

Played the striker position

- **Sprinter**

Multiple school track awards

- **Debate**

1st place in inter-college debate competition

- **Guitarist**

Songwriter and Rhythm Guitarist for college band