Senuk Chanthula Wijesinghe

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Summary: Dynamic and motivated Academy of Engineering student with experience in many core programming languages and game/software development. Seeking to bring creativity and collaboration to the software engineering industry and to make an impact on the open source community.

Experience:

- **Programming Language Developer** *(2021 - Present)*
  - Developed several custom languages to apply and expand my knowledge.
  - **Relevant Products:**
    - **Taro *(www.github.com/Mespyr/Taro):***
      - Designed a modern stack-based programming language featuring garbage collection and an interface for interacting with C libraries
      - Currently in development, with the language's syntax fully specified and implementation underway
    - **EasyGC *(www.github.com/Mespyr/EasyGC):***
      - Developed a lightweight, header-only garbage collector for C, utilizing `malloc` and `realloc` for efficient memory management
      - Designed specifically for integration with C code generated by Taro
    - **Ochre *(www.github.com/Mespyr/Ochre):***
      - Implemented a low-level stack-based language that compiles to assembly for optimized performance
      - Enhanced the generated assembly by filtering and replacing instructions to improve process efficiency.
      - Simplified memory management using a unique method I dubbed "memory fields" rather than complex structures, improving resource utilization by allowing the user to have more control of the memory their program uses
- **Game Designer** *(2023 - Present)*
  - Specialized in designing and developing game engines for 2D games
  - Designed and implemented a custom pixel renderer featuring a VHS-style scanline visual effect.
- **Frontend Developer** *(2024 - Present)*
  - Designed and developed multiple iterations of my personal portfolio website to showcase my projects currently in development (mespyr.github.io)
- **Volunteer / Java Mentor** *(Apex Middle School Robotics Team, Fall 2024 - Spring 2025)*
  - Developed a custom modular codebase that enabled programmers to isolate robot components into individual classes, promoting clean architecture and seamless integration across various executable programs on the robot
  - Taught students Java programming and the use of Android Studio for robotics development
- **Black Belt / Assistant Teacher** *(Karate International of Apex, 2023-2024)*
  - Assisted in organizing and directing belt promotion ceremonies, ensuring smooth operation and the recognition of students' achievements
  - Upheld and modeled high behavioral standards across all branches of Karate International, in order to maintain a respectful and disciplined training environment
  - Taught and provided constructive feedback to students to help them improve

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Skills:

- **Programming Languages:** C++, C, Python, Java, Assembly
- **Software:** Linux, Emacs, Vim/Neovim, Bash, Clang, GCC, FASM, NASM, CMake, Make, LibreOffice, Krita
- **Expertise:** Programming language design, stack-based languages, command-line scripting, assembling PCs, pixel art, 2D game development
- **Music:** Brass and woodwind player (sousaphone and baritone saxophone)

Education:

Apex Friendship High School | Apex, NC | Graduating 2027 | GPA: 4.45

- Member of the Academy of Engineering and Advanced Manufacturing
- **Relevant Coursework:** AP Computer Science Principles, AP Precalculus, Robotics II Honors, Technology Engineering and Design Honors, PLTW Introduction to Engineering Design

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Awards and Recognition:

- Honor Roll for 2 consecutive years
- Member of the Tri-M Music Honors Society
- Bands of America Mid-Atlantic Regional Class 4A Champion (2024)
- 2-Time Second Placer at the AIA Winds South Championship (2023-2024)
- Finalist at the Carolina Regional Bands of America Marching Championship (2023)
- Winner of the AoE Ornament Design Competition (2023)