Elias Yilma

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EDUCATION

ADDIS ABABA UNIVERSITY
M.Sc. in Structural Engineering
Jun 2017 | Addis Ababa, Ethiopia
Honors: Great Distinction
Cum. GPA: 3.70 / 4.0

ADDIS ABABA UNIVERSITY
B.Sc. in Civil Engineering
Jun 2014 | Addis Ababa, Ethiopia
Honors: Very Great Distinction
Cum. GPA: 3.78 / 4.0
Major GPA: 3.72 / 4.0

COURSEWORK

GRADUATE
Vector + Tensor Calculus
Structural Optimization
Matrix Methods
Finite Element Methods
Research Methods

UNDERGRADUATE
Probability and Statistics
Advanced Calculus
Computational Methods
Linear Algebra

SELF-THOUGHT
Evolutionary Computation
Functional Programming
Object-Oriented Programming
Machine Learning
Natural Language Understanding
Deep Learning
Symbolic AI
Logic Programming

SKILLS

PROGRAMMING LANGUAGES
Proficient:
Java • Lisp • C# • MATLAB
Familiar:
Python • C • C++ • R

TECHNOLOGIES
Unity • Git • TensorFlow • OpenCV • LaTeX • Adobe Creative Cloud • JavaFX • BLAS

TECHNICAL PROJECTS

NATURAL LANGUAGE UNDERSTANDING MODEL | Demo
Jun 2019 - Present
- Designed and Implemented a natural language understanding model (in Unity/C#) that uses physical simulations to understand English expressions.
- Achieved 100% accuracy in 7 of the 20 "bAbI" tasks from Facebook's question-answering dataset.
- Identified and rectified Errors within the "bAbi" dataset.

GENETIC STRUCTURAL OPTIMIZATION | Github , Demo
Oct 2016 - Apr 2017
- Implemented a genetic optimization framework in Java that produces cost efficient structural designs for buildings.
- Developed space and time complexity expressions for the optimization model.
- Achieved building cost reductions of up to 15% over regular structural designs.

NEURAL NETWORK PLAYGROUND | Github , Demo
Aug 2019
- Ported TensorFlow's Neural Network Visualizer to Java.

ACADEMIC WORK EXPERIENCE

ADDIS ABABA INSTITUTE OF TECHNOLOGY | Lecturer
Jan 2015 - Present | Addis Ababa, Ethiopia
- Courses Thought : - MATLAB, Introduction to Computer Programming, Numerical Methods, Integrated Design, and Theory of Structures I and II.
- Advised/Mentored >60 students for their B.Sc. theses, semester projects and internships.
- Wrote the computational laboratory manual used by civil engineering undergraduate students.
- Reviewed course syllabus for specific courses in the Civil Engineering Curriculum.

AWARDS

2014 AAiT Award for Academic Excellence
2014 AAiT Award for Best B.Sc. Thesis

PUBLICATIONS

1. B. Habte and E. Yilma, **Structural Optimization of Frames Using Genetic Algorithms.**, *Under submission for IJOC-TA*, 2019.
2. E.Yilma, **A Simulation-based Architecture for Understanding and Generating language.**, *ArXiv Preprint*, 2019.