

# John Gilbert

FULL STACK SOFTWARE DEVELOPMENT · AI RESEARCH

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## Experience

### Full Stack Software Engineer

2022 - Present

ELMNTRI

- Designed and Developed Tools for Data Upload and Analysis
- Wrote Backend REST APIs in Go
- Designed and Created Frontend Pages with Vue

### AI Researcher

2019 - 2022

NATIONAL TAIWAN UNIVERSITY

- Investigated Security Vulnerabilities in Distributed AI Systems with regard to Secure Aggregation
- Trained Deep Learning and Decision Tree Models to Make Predictions from Tabular Medical Data
- Collaborated with Researchers to Analyze and Predict Patient Outcomes from Influenza-Like Illness

### Software Developer

2018 - 2019

FREELANCE

- Developed Backend Modules and Frontend Templates with CRUD Functionality using Django
- Implemented Payment Methods with Django-Paypal API
- Automated Email Responses for Forms

## Education

### Computer Science and Information Engineering, M.S.

2019 - 2022

NATIONAL TAIWAN UNIVERSITY

Thesis: Secure Aggregation Is Not All You Need: Mitigating Privacy Attacks with Noise Tolerance in Federated Learning

### Chemistry, B.S.

2012 - 2016

UNIVERSITY OF VERMONT

Analytical and Organic Chemistry Research, Minors in Mathematics and Economics

## Skills

### Programming Languages

JavaScript, TypeScript (Vue, React, Express)

HTML, CSS (Sass, Tailwind)

Python (PyTorch, TensorFlow, Numpy, Pandas, Numba, Cython, Django, Flask)

Go (Gin, Gorm)

### Software Tools

AWS GCP MongoDB Bash Git Vim VS Code Jupyter Docker

### Languages

English (Native) Mandarin (Fluent) Spanish (Advanced)

## Projects

SECURE AGGREGATION ALTERNATIVE	Demonstrated effective alternative to Secure Aggregation for Federated Learning with PyTorch	2021-2022
CHATBOX	Chat App made with Meteor, React, and MongoDB	2021
AI DEFENSE	Denosed adversarial attack images with autoencoders using TensorFlow	2020

## Publications

Chiu et al. "Machine learning for emerging infectious disease field responses." Scientific Reports, 2021.

John Reuben Gilbert, Hua-Yen Lee, Yu-Chi Chou, Han-Ting Jian. "Mitigating Effects of COVID-19 via an Anonymous Authentication System and Zero-Knowledge Proofs." Taiwan Academic Network Conference, 2021.