

# ANNMARGARET TUTU

ML/DL/DATA ENGINEER/RESEARCHER

857-600-9277 | [codeamt.github.io](https://codeamt.github.io) |

## Open Source Code / Projects

### Blockchain Mining Pool Game Strategy Simulation

Implemented a mining game environment and players with Swift5 and Kitura web server framework; coded mining strategies to (a) compute maximum relative rewards with set parameters and (b) reduce utility for selfish players.

### Algorithm Cross-Look for Bitcoin Price Forecasting

Engineered a multivariate time-series dataset for the bitcoin historical price index; implemented forecasting algorithms in Python and with industry-standard libraries; compared prediction performance Achieved a  $5.6 \times 10^{-10}$  RMSE rate regressing 29 linear features.

### Udacity-Facebook Kaggle PyTorch Challenge

Visualized statistical moments; augmented a dataset of the most frequent flower types occurring in the UK; performed transfer learning with a pre-trained ResNet50 graph to model an image classification problem for 102 categories with 99% accuracy. Scored in the top quartile of private leaderboard submissions.

### DeepBlock Mobile Edge-computing (MEC) Network

Developing a blockchain-based stack MEC MVP in Swift/Python that prototypes a Proof-of-Decentralized-Convergence ("PoDC") protocol for more energy-efficient mobile mining. Presented abstract at peer-reviewed Workshops co-located at NeurIPS 2018.

## Degrees / Certificates

<b>Android Development Nanodegree</b> Google / Udacity	<b>Mar. 19</b> 6 Projects
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<b>Advanced Data Science Specialization</b> IBM / Coursera	<b>Mar. 19</b> 5 Courses
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<b>Deep Learning Specialization</b> deeplearning.ai	<b>Mar. 18</b> 5 Courses
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<b>BSc. in Film &amp; Television</b> Boston University	<b>May 13</b>
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## Work History

<b>Software Developer, Freelance</b> Self-Employed	<b>Present</b> Mar. 15
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<b>Product Engineer, Founder</b> Blaqbox LLC.	<b>Dec. 17</b> Mar. 15
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<b>Data Visualization Engineer</b> Pagos, Inc.	<b>Mar. 15</b> Sep. 14
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## Research Involvement

<b>Work Group Member, OLM</b> Mechanism Design for Social Good	<b>Spr. 19</b>
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<b>Fast.ai Live International Fellow</b> Facebook / Udacity	<b>Spr. 19</b>
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## Publications / Working Papers

"DeepBlock: a decentralized approach to hardware acceleration for deep learning." (2018)

"Circular queue game and infrastructure design for mining pools." (2019)

"Moving Video Witnessing to a Decision-Making Blockchain." (2019)

## Scholarships / Awards

Grow with Google Scholarship	<b>Jan. 18</b>
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Edie Windsor Coding Scholarship	<b>Jul. 17</b>
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## Languages / Frameworks / Tools

Python 3+, Java, Swift 5, JS, SQL, Solidity  
Fast.ai, PyTorch, TF/Keras, PySpark, DL4J  
Flask, Kitura, React.js, Spark, Android/iOS  
Git, SSH, TCP, Linux, Docker, Kubernetes