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Mihai Avram

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Objective

Seeking an opportunity that partakes in the development of solutions to Social Problems using technology: Web Development, Full-Stack Development, and/or Machine Learning.

Relevant Education

University of Illinois in Urbana-Champaign, IL — **Current (on one year break)**
Ph.D. in Information Sciences

Indiana University in Bloomington, IN — **May 2018**
Master of Science in Computer Science, GPA: 3.84/4.00

Purdue University in West Lafayette, IN — **May 2014**
Bachelor of Science in Mathematics, GPA: 3.20/4.00
Minors in Statistics, Sociology, and Management

Web/Full-Stack Development Experience

Fakey: A social media news literacy game — **Fall 2017 – Current**

- Lead developer and creator of Fakey (Web, Android, iOS)
- Created Fakey using Vue.js, Django, MySQL, and Apache Cordova
- Took part in the research and ideation process for Fakey using fake-news and social computing findings and scientific publications
- Iterated and improved Fakey features by surveying stakeholders and presenting the project at various meetings and conferences
- Currently still supporting Fakey by improving features from user feedback, and fixing bugs

Schedule Buddy: A well being and social impact scheduling system — **Spring 2019 – Current**

- Co-created the back-end in Django/PostgreSQL and fully created the front-end in Vue.js
- Currently managing and leading a small team towards improving, expanding, and launching the product

4Caster: Commission-free sports betting (website) — **Spring 2019 – Current**

- CTO of a small team in a start-up environment using agile development and sprints
- Building Node.js/MongoDB micro-services to integrate decentralized betting using the block-chain
- Taking part in the DevOps life-cycle of the product using the Google Cloud Platform, Mongo Atlas, CI/CD through GitLab, organization via Trello, and documentation via Notion

Code for America: Young Government Leaders (YGL) Website Project — **Fall 2018 – Spring 2019**

- Creating a LAMP website with Docker to support YGL which is a nonprofit providing a space for young government leaders in Chicago to make a difference

Hoaxy: Social media news/fake-news chatter analysis/visualization tool — **Spring 2017 – Spring 2018**

- Created Hoaxy news board and search functionality on the landing page using Python APIs and CRON jobs to automate recent news scraping to the site
- Took part in D3.js/Sigma.js optimizations in order to enable the visualization to render quicker
- Innovated new features and discussed bugs in weekly meetings to expedite the development process
- Created various features such as tooltips, animation timelines, and bot cache system using Bootstrap, JavaScript, HTML5, CSS3, and Sigma.js, and D3.js

ECHO Global Logistics: Job board creation — **Spring 2016**

- Created a job board for ECHO Global Logistics using JavaScript and REST APIs

FHLBC Website: Proprietary banking application — **Summer 2014 – Fall 2015**

- Created and maintained the FHLBC website and its processes using C#, SQL Server, and Octopus Deploy

- Took part in fixing loan processing bugs, UI bugs, and creating triggers/stored procedures to extend bank processing functionality

Industry Experience

Avanade Consulting: Chicago, IL **2014 – 2016**

- Took part in full application life-cycle (Requirements gathering, Application Development, Test Development Change, Deployment of Change, Support previous Deployments) as part of the Production Support team
- Learned an array of Microsoft technologies applicable to back-end data storage and data manipulation (SQL Server), middleware logic for large-scale Mortgage Banking applications (C#, PowerShell, Automation), front-end UI experience (HTML, JavaScript, CSS), as well as version control using Visual Studio Team Foundation Server
- Presented various technologies and projects to business users, communicated closely with clients, and assisted in "Live" Production critical failures bi-monthly
- Acquired a general idea of the full-stack development toolkit: Web Design, Application Design, UI/UX, Testing, Version Control, Analytics, Big Data, Reporting, Machine Learning, Data Mining, and Cloud

Leadership Experience

CTO at 4caster: A commission-free sports betting startup **Spring 2019 - Current**

Project Lead for Schedule Buddy: A well being and social impact scheduling system **Spring 2019 - Current**

Indiana University: As a student/researcher in Bloomington, IN **Fall 2016 – Spring 2018**

- Assisted undergraduates and fellow researchers with various problems regarding system/software configurations, problem formulations, research methods, and programming tips
- Coordinated and led/co-led meetings with regards to research projects or class projects

Avande Consulting: As a senior solutions developer in Chicago, IL **2014 - 2016**

- Led and co-led meetings regarding production support tasks essentially co-ordinating and assigning tasks to offshore team members
- Briefly mentored incoming analysts with system/software configurations and programming tips

EPICS: (Engineering Projects in Community Service) at Purdue University, West Lafayette, IN **2010 - 2013**

- Presented product prototype to stakeholders and collaborators, taking part in the decision-making process
- Coordinated meetings to discuss progress, issues, and goals. Constructed decision matrices, tested prototypes, and delivered the final project to the client

Research Experience

University of Illinois: Urbana-Champaign, IL **Summer 2018 – Summer 2019**

- Developing methodology and applied experimentation with Adversarial Learning on Social Networks
- Created a Python framework to enable simulations on any networks using any desired graphs, node positions, budgets, functions, and evaluation metrics/goals
- Mining for patterns in how people interact with misinformation on social media feeds using **Fakey**
- Assisted with writing grants and submitting preliminary work to conferences
- Crafted a rough draft of a publication for our work on patterns in how people interact with misinformation on social media feeds using Fakey
- Crafted a rough draft of a publication for our work on Adversarial Learning in Graphs
- Presented poster titled “Towards an open-source framework to assess the robustness of network structures and metrics to adversarial attacks and ascertain adversarial attack patterns” at the iSchool Corporate Showcase 2019 in Champaign, IL
- Presented poster titled “Adversarial perturbations for identifying strategies toward biasing the perceptions of power and influence in social networks” at the iSchool Research Showcase 2018 in Champaign, IL

Indiana University: Bloomington, IN **Fall 2016 – Summer 2018**

- Completed my Master's Thesis funded by the Democracy Fund which involves the study and prevention of misinformation in social media by creating, using, and improving tools such as Hoaxy, OSoMe, Botometer, and a media literacy game called Fakey.
- Published "HarpLDA+: Optimizing Latent Dirichlet Allocation for Parallel Efficiency" (IEEE Big Data 2017) and **"**Finding and counting tree-like subgraphs using MapReduce**"** (IEEE TMSCS 2017) under professor Judy Qiu in the summer of 2017
- Created a Machine Learning MOOC under Professor Ying Ding for the IU Data Science On-Ramp Program in the summer of 2017
- Fact Checking: Awarded 5th place in the 2017 WSDM Cup and published the paper "RelSifter: Scoring Triples from Type-like Relations"
- Assisted in research discussions, manual data annotation, and building algorithm comparison as well as feature extraction tools using Python
- Presented relevant research to peers and collaborators
- Served as a Web Administrator for the IU Complex Networks and Systems WordPress website

University of Michigan: Ann Arbor, Michigan **Summer 2013**

- Learned and implemented the Radiative Transport Equation (RTE) in three dimensions
- Created a Java applet to extrapolate the intensity of light in random media using the RTE
- Wrote a report in LaTeX explaining the RTE theory and how to use the Java applet

Discovery Park Undergraduate Research Internship Program:
Purdue University, West Lafayette, IN **Spring 2013**

- Analyzed journal articles, cleaned and mined data using Python, and ran analysis in R to discern our research results – i.e. Civilians killed due to IDEs
- Published a Journal Article: "Civilian Deaths and the Iraq War: Who is Responsible?" in the Journal of Purdue Undergraduate Research

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Teaching Experience

University of Illinois: As a Ph.D. student in Champaign, IL **Summer 2018**

- Served as a TA for a Network Analysis class for the 2018 Global Institute teaching program

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Volunteer Experience

Code for America, Pro-Truth Pledge and Movement, Zooniverse, Outreach for NetSci 2017 conference, Aspire Foundation, Misericordia Heart of Mercy, Greater Chicago Food Repository, Habitat for Humanity, Run For Cause

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Relevant Skills

JavaScript:	★★★★☆	Git:	★★★★☆
HTML5:	★★★★☆	Python:	★★★★☆
CSS3:	★★★★☆	SQL:	★★★★☆
WordPress:	★★★☆☆	MongoDB:	★★★★☆
Bootstrap:	★★★★☆	Linux OS/Linux Bash:	★★★★☆
React:	★★★☆☆	PHP:	★★★☆☆
Vue.js:	★★★★☆	Django:	★★★☆☆
Apache Cordova:	★★★☆☆	Node.js:	★★★★☆
Docker:	★★★☆☆	AWS:	★★★☆☆
D3.js:	★★★☆☆	npm:	★★★☆☆
Machine Learning:	★★★★☆	Data Mining:	★★★★☆
Network Science:	★★★★☆	LaTeX:	★★★★☆
NLP:	★★★☆☆	Deep Learning:	★★★☆☆

Hadoop:	★★★☆☆	Cloud/Distributed Computing:	★★★☆☆
Algorithms:	★★★☆☆	C/C++:	★★★☆☆
R:	★★★☆☆	Java:	★★★☆☆
Microsoft Office:	★★★★☆	Google Cloud Platform:	★★★★☆
ES6:	★★★★☆		