

E-mail: mihai.v.avram@gmail.com
Website: <https://mihaisplace.com>
Blog: <https://mihaisplace.blog>

Mihai Avram

GitHub: <https://github.com/mihaivavram>
GoogleScholar:
<https://scholar.google.com/citations?user=Yb8DVskAAAAJ&hl=en>

Objective

Seeking opportunities in the development of solutions to pressing socio-technical problems using technology: Web Development, Full-Stack Development, and/or Machine Learning.

Relevant Education

University of Illinois in Urbana-Champaign, IL
Ph.D. in Information Sciences

Current (on one year break)

Indiana University in Bloomington, IN
Master of Science in Computer Science, GPA: 3.84/4.00

May 2018

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

May 2014

Software Engineering Experience (Full Stack)

ghSmart: Management Consulting Company (ghsmart.com)

Spring 2020 – Current

- Leading the development effort for text extraction, ETL, Data Mining, and Natural Language Processing
- Conducting market research for enterprise-level ETL tools such as Elasticsearch, Azure Cognitive Search, and IBM Cloud
- Creating text extraction pipelines, text analytics, and visualizations using Python text libraries, NLP, SpaCy, and Elasticsearch

Welsome: A self-improvement and social impact platform to help us achieve our goals (welsome.org)

Spring 2019 – Current

- Sole founder and creator - development, DevOps, and user interviews/marketing/finances/planning
- Taking part in the idea to product life-cycle such as – market research, ideation, prototyping, and creation of the product
- Created the back-end in Django/PostgreSQL and front-end in Vue.js and Apache Cordova, all hosted on AWS
- Polishing a progressive mobile app using Quasar and Cordova

Fakey: A social media news literacy game (fakey.iuni.iu.edu)

Fall 2017 – Current

- Lead developer and creator of Fakey (Web, Android, iOS)
- Usage is roughly 10 users interacting with 100 sessions per day, round 10,000 unique users, overed by various news sources
- 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
- Took part in various interviews and speaking events including with Poynter and EU DisinfoLab

Security Startup: A web automation and security platform

Fall 2019 – Spring 2020

- Creating automation tools using tools like Node.js, and Puppeteer
- Leading the development effort, upholding DevOps best practices, and mentoring junior devs
- Brainstorming, researching, and taking part of the ideation effort to help with planning the project
- Taking part in research and development, reading relevant research literature, and assisting with grant applications

OpenKasm: An AI based social media monitoring and reporting tool

Fall 2019 – Current

- Use data-mining techniques to obtain social media data
- Learn, interpret and implement state of the art machine learning methods for bot detection, all done in Python and R

4Castersports: Commission-free sports betting (4castersports.com)

Spring 2019 – Fall 2019

- Dev lead and freelancer of a small team in a start-up environment using agile development and sprints
- Building Node.js/MongoDB/Vue.js 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

Hoaxy: Social media news/fake-news chatter analysis/visualization tool (hoaxy.iuni.iu.edu)

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

Research Experience

University of Illinois: Urbana-Champaign, IL

Summer 2018 – Current

- Published "[Exposure to Social Engagement Metrics Increases Vulnerability to Misinformation](#)" in (The Harvard Kennedy School Misinformation Review, 2020 Issue)
- Published "[Effectiveness of the Execution and Prevention of Metric-Based Adversarial Attacks on Social Network Data](#)" in the (Journal of Multidisciplinary Digital Publishing Institute 2020)
- Published "[Adversarial perturbations to manipulate the perception of power and influence in networks](#)" in (ASONAM 2019)
- Developed 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

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

Dev Lead for ghSmart: Information Extraction, Natural Language Processing, and NER

Spring 2020 - Current

Founder/Dev Lead for Welsome: A well being and social impact scheduling system

Spring 2019 - Current

Dev lead at a Security Startup: A privacy and security startup focused on web automation

Fall 2019 – Spring 2020

Dev lead at 4castersports: A commission-free sports betting startup

Spring 2019 – Fall 2019

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

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

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

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: | ★★★★★ | Elasticsearch: | ★★★★★ |