Martin Michalski

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- E D U C A T I O N -

B.S. Computer Engineering - University of Illinois at Urbana-Champaign (GPA: 3.91/4.00)   *(2022)*

- E X P E R I E N C E -

Research Assistant, Jaiwei Han - University of Illinois at Urbana-Champaign   *(01/2022) - present*

- Leading research for a named entity recognition system, presenting weekly status updates to 15 group members and IBM backers
- Developed and tested a natural language understanding model, gaining 1.2% in metrics over current state of the art
- Created a new testing methodology for a topic-modelling method, better capturing model performance
- Quickened inference bandwidth by over 3,000% for a PyTorch model used by the research group for data exploration

Research Assistant, Roxana Girju - University of Illinois at Urbana-Champaign   *(09/2021) - (01/2022)*

- Performed in-depth exploratory analyses of a 440-essay corpus that contained narrative accounts of patient-doctor interactions, exploring empathy in a clinical setting
- Presented our findings in the annual SAS conference and published a preprint for the work presented
- Designed and implemented a module using NLTK and Plotly for pre-processing of the corpus, visualization of various statistics, and efficient execution of common data transformations

Data Science Intern - Motorola Solutions   *(05/2021) - (08/2021)*

- Leveraged a 40GB dataset of network logs from a 911 call center to develop methods to detect hackers in the center network
- Implemented an internal library, making it easier for SOC analysts to visualize network traffic
- Made use of various unsupervised forecasting and clustering models, creating proof of concept systems for the detection of various attack types

Software Engineer Intern - Motorola Solutions   *(06/2020) - (12/2020)*

- Implemented new features for an internal schedule generation tool which saves Motorola $250,000/year, giving 101 tool users increased control over the generation process
- Provided technical support to tool users when they encountered issues
- Leveraged React.js in development of UI features, Azure Functions for data manipulation in the Cloud, and TestRail for test suite management/execution
- Designed and implemented a behavioral test suit with Behave and Selenium in Python

- P U B L I C A T I O N S -

Michalski, M., & Girju, R. (2022, August 23). An Empathy Account of Premed Students' Narrative Essays.
https://doi.org/10.31219/osf.io/d478qs

- P R O J E C T S -

Discord Client – ECE 385, University of Illinois at Urbana-Champaign   *(08/2021) - (12/2021)*

- Designed and tested a pixel-level graphics card for an FPGA in SystemVerilog, using Quartus
- Wrote an interface for the card with rendering functions in C/C++, then integrated these functions into the main event loop, allowing us to serve a Discord UI to users on a VGA monitor
- Added support for keyboard input into our system, allowing users to create messages, as well as navigate channels and servers

PenguinOS - ECE 391, University of Illinois at Urbana-Champaign   *(08/2020) - (12/2020)*

- Worked in tandem with 3 group members, creating an operating system using a mixture of C and x86 assembly
- Implemented a keyboard driver, PIC initialization routine, system calls for cursor control, and a home-baked version of vim
- Won 3rd out of 54 teams in the operating system design competition for the course

- S K I L L S & A C H I E V E M E N T S -

Programming Languages – Python, C, C++, x86, Javascript, Dart, Java

Frameworks – NumPy, PyTorch, datatable, NLTK, scikit-learn, Sphinx, Selenium, pandas, scikit-learn, React.js

Achievements – National Merit Scholar, Northrop Grumman HIP Scholar

Languages – English, Polish