

Michael E. Nelson
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EDUCATION

Michigan State University, East Lansing, MI
M.A., Media and Information
Aug 2015 – May 2017

North Park University, Chicago, IL
B.A., History, Summa Cum Laude
Aug 2007 – May 2011

PROFESSIONAL EXPERIENCE

Front End Developer Feb 2017 – present

Matrix Center for Digital Humanities and Social Sciences

- Implemented responsive, mobile-first WordPress theming from design comps
- Developed HTML, CSS, and vanilla JavaScript components, and coordinated UI components with PHP controllers using asynchronous requests
- Worked with CKEditor (WYSIWYG text editor for the web) and jQuery on peer-review functionality for a scholarly communication platform
- Collaborated on version-controlled repositories (Subversion)

Full Stack Development Consultant Jan 2017 – present

School of Social Work, Michigan State University

- Developed a client-server system to support the data analysis tasks of researchers in the Michigan Stroke Transitions Trial (MISTT) project
- Wrote server-side logic to securely accept, preprocess, and persist Microsoft Excel and CSV uploads, and to associate these uploaded data with Google Analytics data retrieved via HTTP with the google-api-python-client library (Python)
- Extracted goals as feature matrices from unstructured text data with pandas and SciPy (Python), and performed clustering analyses on the data with scikit-learn (Python)
- Wrote client-side logic to consume casework data from the Python application and pass them to UI components like time-series graphs (implemented with d3.js)

Graduate Research Assistant Aug – Dec 2016

Department of Media and Information, Michigan State University

- Gathered data from Elsevier Scopus and Thomson Reuters Web of Knowledge
- Performed bibliometric and citation analyses using Pajek and networkx (Python)

Data Analyst and Research Assistant Oct 2015 – May 2017

Department of Advertising and P.R., Michigan State University

- Implemented the Affect Misattribution Procedure (AMP) and Taylor Aggression Paradigm (TAP) for use on the Web, as JavaScript apps atop the Qualtrics platform
- Administered collection of psychophysiological data with BIOPAC and AcqKnowledge, reaction-time data with DirectRT, and eye-tracking data with Tobii Pro Studio
- Rendered signal data suitable for SPSS analysis using pandas (Python)

Web Accessibility/Usability Intern Sep 2015 – May 2016

College of Arts and Letters, Michigan State University

- Remediated websites and D2L learning management system (LMS) courseware for usability and accessibility in terms of WCAG 2.0
- Wrote technical reports on usability and accessibility for decision-makers in the College

GRANTS, FELLOWSHIPS, & AWARDS

Cultural Heritage Informatics Graduate Fellowship Cultural Heritage Informatics Initiative, Michigan State University	Aug 2016 – May 2017
Research Experience for Master’s Students Graduate Fellowship School of Information, University of Michigan	May 2016 – Aug 2016
Thomas F. Baldwin Endowed Fellowship Department of Media and Information, Michigan State University	May 2016
M.A. Merit Scholarship Department of Media and Information, Michigan State University	May 2016
Fulbright English Teaching Assistantship to Poland Fulbright Program, U.S. Department of State	Sep 2011 – Jul 2012
Zenos and Barbara Hawkinson Prize for Best Paper in History Department of History, North Park University	Apr 2010
AmeriCorps Education Award Jumpstart for Young Children, Inc., Boston, MA	Sep 2009 – Jun 2010
Presidential Scholarship North Park University	Aug 2007 – May 2011

PERSONAL & VOLUNTEER-BASED PROJECTS

Exploring Cultural Heritage Documentation with [Glambulator](#) (CHI Initiative)

- Developed a React.js application for exploring the CIDOC conceptual reference model (CRM), executing Sparql queries against the British Museum’s Semantic Web Collection Online, and browsing graphs of RDF triples built with d3.js

Observing Consumer Behavior on Instagram (Independent)

- Developed a Universal Windows Platform (UWP) tablet application to simulate the Instagram user experience

The Future of Data-Related Publication (ICPSR and the University of Michigan iSchool)

- Gathered requirements (shadowing, semi-structured interviews) for a system to support improved bibliography comprehensiveness, usability, and ingestion processes at the Inter-university Consortium for Political and Social Research’s (ICPSR)
- Used UML to model actors, use cases, process inputs and outputs, and activities involved in maintaining ICPSR’s bibliography of data-related publications

The Changing Character of Digital Divides (The Quello Center, Michigan State University)

- Analyzed archival survey data for substantive shifts in questions and answers regarding Internet usage (using SPSS 23.0)
- Analyzed survey instruments for methodological shifts in the study of Internet usage

CONFERENCE PAPERS, PRESENTATIONS, AND PUBLICATIONS

One peer-reviewed journal publication in the field of Internet studies, and eleven conference papers/posters and in the areas of social media advertising, health

communication, cultural adaptation in advertising, business process analysis, accessibility and instruction, and digital divides

PROFESSIONAL TRAINING AND CERTIFICATIONS

Front-End Web Developer Nanodegree
Udacity.com, Mountain View, CA

Apr 2015

Paraprofessional Educator Endorsement (ELS-PARA)
Board of Education, State of Illinois

Apr 2015 – Jun 2020

KEY PROFESSIONAL SKILLS

Data analysis

- Network analysis with Pajek and networkx (Python)
- Tabular data analysis with SPSS and Microsoft Excel
- Network and tabular data wrangling with Microsoft Excel, pandas, NumPy, and SciPy (Python)
- Text data analysis and natural language processing with scikit-learn and nltk (Python)

Database design & development

- Relational data modeling in UML
- Data model implementation and normalization to third normal form in PostgreSQL and Microsoft Access

Web development

- Designing, developing, and securing server-side systems using the Flask Python web framework, and implementing data persistence using the SQLAlchemy ORM
- Building client-side systems with the Angular (1.x), jQuery, React.js, Knockout.js, and Prototype.js JavaScript frameworks
- Automating tasks (unit-testing, linting, etc.) with Webpack, Grunt, and Gulp for ES5 or for transpiling to ES2015 (ES6)
- Deploying systems and assets on Heroku and Microsoft Azure

Communication

- Writing technical and business documentation used for training new hires, managing knowledge, and reporting to stakeholders; conducting training of interns and new hires
- Training researchers and other graduate students in data analytic and data wrangling techniques (e.g., how to use pandas [Python] to render psychophysiological signal data suitable for analysis in SPSS)

KEY ACCOMPLISHMENTS

- In coursework, led development of a proof-of-concept web application for supporting the data analysis workflow of the interdisciplinary team of researchers on the Michigan Stroke Transitions Trial (MISTT) project, and subsequently was asked by the MISTT team to continue developing the project
- Designed and implemented JavaScript applications for Qualtrics-based, between-subject measurement of aggression and implicit bias, data from which applications are currently being used by the research team in pursuit of an NIH grant