

Brendan Knapp

(585) 245-4741 | brendan.g.knapp@gmail.com

EDUCATION

Middlebury Institute of International Studies (MIIS), Monterey, CA *M.A. Nonproliferation and Terrorism Studies*

January 2018 - May 2018

GPA: 3.85 / 4.0

B.A. International Studies

January 2016 - December 2017

GPA: 3.84 / 4.0 | *magna cum laude*

Defense Language Institute Foreign Language Center (DLI), Monterey, CA *Modern Standard Arabic*

April 2013 - March 2015

GPA: 3.7 / 4.0 | High Honors

EXPERIENCE

Mixed-Methods Evaluation, Training & Analysis (META) Lab *Lead Analytic Coordinator and Network Analysis Teaching Assistant*

February 2017 - May 2018 | Monterey, CA

- Assisted Dr. Phil Murphy in teaching the MIIS Network Analysis course, including essential support for a major update to its content and delivery.
 - Developed tailored code and tutorials to teach relational data manipulation, descriptive network metrics, community detection, visualization, and statistical modeling.
- Provided critical capabilities as a member of the Social Network Analysis team, which conducted an analysis of Middlebury's international ecosystem that enabled evidence-based decisions made by the Envisioning Middlebury Strategic Initiative.
- Supported META Lab projects with local communities by developing programmatic workflows for data carpentry, visualization, and interactive web apps.
- Wrote lesson plans, developed tutorials, and led two workshops and one three-week series teaching R and Python, which provided a foundation upon which the current cohort is building.
- Ensured sustainable institutional skills and capabilities by creating internal learning opportunities, as well as personally recruiting several motivated analysts who would successfully build on past work.

James Martin Center for Nonproliferation Studies (CNS)

Research Assistant, East Asia Nonproliferation Program

May 2017 - May 2018 | Monterey, CA

- Developed a complete pipeline for North Korean news extraction and natural language processing.
 - Conducted sentiment analysis, topic modeling, and named-entity recognition using statistical models and deep learning methods (convolutional and recurrent neural networks).
 - Created a database that combines the relationships between co-mentioned entities with U.S. and international sanctions data, facilitating better identification of DPRK threat networks.
 - Presented findings and lessons-learned to the International Atomic Energy Agency (IAEA).
- Designed and built tools that dramatically improve analyst efficiency and enhance research.
 - Developed a web app which searches specified websites for images before extracting and classifying them via a convolutional neural network, allowing analysts to better prioritize their time. A senior researcher presented a prototype to safeguards analysts at the IAEA.
 - Developed a web app that provides a way to easily search a gazetteer for uncommon location names and export the geometry, removing the skill barriers of code and regular expressions.
 - Processed text data by annotating entities with a color-coding scheme and geotagging mentioned locations, reducing the time required by analysts to search thousands of reports.
- Performed extensive analysis using state of the art remote sensing imagery for the [Geo4Nonpro Project](#), an initiative for crowdsourced imagery analysis and annotation of global WMD programs.
 - Processed, annotated, and modeled multispectral, hyperspectral, and synthetic-aperture radar imagery of hundreds of locations, including uranium mines and enrichment facilities, nuclear weapon and missile test areas, air defense batteries, and chemical weapon sites.
- Established and strengthened relationships with CNS partners, such as Planet Labs, Thomson Reuters Labs, the Air Force Research Laboratory, RIT's Digital Imaging and Remote Sensing Lab, Airbus Defense and Space, Harris Geospatial, and King's College London's Project Alpha.

INTERESTS

- Enabling practitioners.
- Data-driven intelligence.
- Bridging theory and practice.

SKILLS

Data Science

- Network Analysis
- Spatial Analysis
- Remote Sensing
- Machine Learning
- Natural Language Processing

Programming

- R (Advanced)
- Python (Intermediate)
- C++ (Basic)

Foreign Languages

- Arabic, DLPT: 2+ / 3, 2015
- French, ACTFL: Intermediate, 2016
- Persian Dari, DLPT OPI: 1, 2011

OPEN-SOURCE SOFTWARE

snatools: A toolkit to bridge graph classes and simplify network analysis.

PUBLICATIONS

M. Hanham, J. Lewis, C. Dill, G. Liu, J. Rodgers, O. Lepinard, B. Knapp, O. Hallam, and B. McIntosh. [Geo4Nonpro 2.0](#). CNS Occasional Paper #38. 2018.

PRESENTATIONS

"Data in the Wild, Text Mining, and Illuminating DPRK Threat Networks" at the International Workshop for New Tools and Technologies for Non-Proliferation April 2018 | Vienna, Austria

"Evaluating Institutional Coalescence with the Use of Exponential Random Graph Models" at the North American Social Networks Conference (INSNA) June 2017 | Washington, D.C.

SAMPLE WORKSHOPS

"R for Data Carpentry and Analysis" March 2018 | Monterey, CA

"Introduction to Python" March 2017 | Monterey, CA

SAMPLE GRADUATE COURSEWORK

Methods

- Advanced Network Analysis
- Advanced Data Analysis
- Advanced GIS
- Data Mining & Collection Tools

Security Studies

- Insurgency & Terrorism Compared
- Threat Financing
- Global Jihadism
- Security & WMD in the Middle East

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Monterey Terrorism Research and Education Program (MonTREP)

Research Assistant, Partially-Funded Directed Study

March 2017 - May 2017 | Monterey, CA

- Researched the activities, members, and relationships of paramilitary groups operating in Syria (with special emphasis given to Salafi jihadist organizations) using English and Arabic news, propaganda, and social media.
- Developed a research protocol to catalogue the contextual, categorical, and spatiotemporal aspects of organizational hierarchies, group evolution, and dyadic relationships, in addition to prototyping relational and graph database schemes for proper data storage.

U.S. Army

Intelligence Section Manager (S2 NCOIC), HHC 369th Sustainment BDE

March 2015 - December 2015 | Camp Smith, NY

- Served as senior enlisted leader of the Brigade's Intelligence and Security Staff Section and direct advisor to the Brigade's Senior Intelligence Officer.
- Standardized the section's workflow for fusion operations and groomed the incoming enlisted leader and junior officers while the unit prepared for a combat deployment.
- Recognized for leadership and resourcefulness with the highest possible ratings on the Noncommissioned Officer Evaluation Report.

Military Skills Trainer, Class Leader and Arabic Student, C Co. 229th Military Intelligence BN

April 2013 - March 2015 | Monterey, CA

- Studied Arabic in an accelerated program while holding responsibility for the morale, welfare, administration, and professional development of 14 junior military trainees.
- Selected above peers as a training leader and subsequently planned military skills exercises, coordinated material resources, and provided expert instruction to junior military trainees.

Clinical Team Manager (NCOIC), C Co. (MED) 427th BSB

April 2012 - May 2012 and August 2012 - October 2012 | Kandahar Airfield, Afghanistan

- Managed the daily operations of a treatment facility's clinical team, which provided routine and emergency medical care to an international military and civilian population.
- Selected above peers and superiors to spearhead medical and military skills training for roughly 75 soldiers, including coordinating resources, establishing evaluation standards, training instructors and evaluators, and supervising a large training area.

Medical Detainee Operations Manager (NCOIC), Combined Joint Interagency Task Force 435

May 2012 - August 2012 | Camp Sabalu-Harrison, Afghanistan

- Selected above peers and superiors to lead a detachment tasked with conducting medical detention operations in a facility undergoing ownership transfer to the Afghan government.
- Supervised a team of 7 medics providing routine and emergency medical care to enemy combatants under hazardous conditions and intense international scrutiny.
- Successfully overcame the social, cultural, and organizational obstacles that exist at the nexus of multinational military operations, insurgency, and militant Islamism, requiring the use of previously acquired Dari language skills to solicit cooperation from Afghan security forces and detained enemy combatants.

Combat Medic to Emergency Medical Sergeant, C Co. (MED) 427th BSB

July 2007 - March 2012 | Various, USA

- Served as a member of the 27th Infantry Brigade Combat Team medical training cadre, which was responsible for the training of roughly 3,000 soldiers in essential medical skills while preparing for deployment to Afghanistan.
- Directly managed the morale, welfare, administration, and professional development of 8 junior soldiers, ensuring that they met the required standards to practice combat medicine in austere and clinical environments.
- Selected above peers and superiors to attend intensive Dari Persian language training and subsequently served as the unit-level cultural subject matter expert and survival language instructor.

SAMPLE TECHNOLOGY EXPERIENCE

Network Analysis	statnet, igraph, tidygraph, Pajek, UCINET, ORA, NetworkX, graph-tool
Data Carpentry & Storage	tidyverse, data.table, pandas, Microsoft Excel, SQL, Neo4J
Spatial Analysis	sf, sp, GeoPandas, leaflet, mapview, ArcGIS, QGIS, Google Earth
Remote Sensing	raster, RStoolbox, stars, ENVI
Machine Learning	Keras, scikit-learn, Tensorflow, lime, PyTorch, fastai
Natural Language Processing	tidytext, text2vec, quanteda, cleanNLP, openNLP, spaCy
Reproducibility & Reporting	R Shiny, Git & GitHub, Markdown, Jupyter, HTML, CSS