

Daniel Kai Sheng BOEY

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Master of Public Administration candidate at SIPA, Columbia University focusing on international development and data analytics. I seek to engineer multi-disciplinary, community-informed and actionable intelligence for policy and operational requirements within crisis such as COVID-19 and natural disasters.

Education

- **COLUMBIA UNIVERSITY, SCHOOL OF INTERNATIONAL AND PUBLIC AFFAIRS** New York, USA
Master of Public Administration, GPA: 3.95/4 2019-Present
 - Concentration: *Economic and Political Development*
 - Specialization: *Data Analytics and Quantitative Analysis*
 - Selected coursework: *Advanced GIS & Spatial Analysis, Advanced Economic Development, Methods for Development Practice, Finance for the World's Poorest, Transforming the Delivery of Healthcare, Impact Investing and Financial Innovations*
- **HERTIE SCHOOL OF GOVERNANCE** Berlin, Germany
Master of Public Policy, ECTS: 1.4 2019-Present
 - Candidate for the SIPA-Hertie Dual Degree Programme | Masters of Public Policy (MPP) degree from the Hertie School and Masters of Public Administration (MPA) degree from Columbia University.
 - Specialization: *Policy Analysis*
 - Selected coursework: *Natural Language Processing with Deep Learning, Statistics II: Causal Analysis, Electricity Economics, Problems with European Energy, Advanced Economics: Taxation and Subsidies*
- **DUKE UNIVERSITY, PRATT SCHOOL OF ENGINEERING** Durham, USA
Bachelor of Science in Engineering (Civil Engineering), GPA: 4.00/4 2016-2019
 - Graduated Summa Cum Laude as the top performing graduate of the Pratt School of Engineering.
 - Specialization: *Environmental Engineering & Water Resources*
 - Selected coursework: *Environmental Engineering Design, Innovating for Social Impact, Advanced Time Series Analysis, Engineering Systems Optimization, Marine Policy, Marine Climate Change*
 - Organizations: *Duke Asian InterVarsity Christian Fellowship, Center for Christianity and Scholarship Fellow, Academy of Model Aeronautics, Tau Beta Pi, Singapore Students Association, Duke Aikido*
 - Awards: *Walter J. Seeley Scholastic Award, Aubrey E. Palmer Award, Dean's List with Distinction (All Semesters)*

Experience

- **Graduate Consultant** New York, USA
United States Department of Defense, CFE-DM Jan 2021 - Present
 - Provide actionable intelligence by scoping and compiling humanitarian agencies' challenges/opportunities in disaster management operations and policies within the COVID-19 climate.
 - Recommend adaptations in the roles, functions responsibilities to ensure the continuation of disaster management operations among humanitarian agencies, international and national governmental agencies, and other stakeholders.
 - Support the ASEAN Coordinating Centre for Humanitarian Assistance Centre and other stakeholders of interest for the Center for Excellence in Disaster Management & Humanitarian Assistance (CFE-DM), DoD.
- **Healthcare Research Executive** Singapore
National Healthcare Group, Health Outcomes and Medical Education Unit Aug 2020 - Nov 2020
 - Conducted, scoped and analysed the results of a survey on migrant workers' health seeking behaviour to the senior management of the Singapore Ministry of Manpower to mitigate COVID-19 epidemiological spread, employing factor and geospatial analysis.
 - Contributed towards establishing Singapore's national infectious disease surveillance strategy and efforts to seek determinants of community health-seeking behaviour that affect epidemiological spread and healthcare provision operations.
 - Utilized data analytics to inform risk stratification models in mitigating COVID-19 infection risk and in predicting COVID-19 outbreaks.

- Health Services Operations Administrator** **Singapore**

◦ *Singapore Ministry of Health, Health Services Group* *May 2020 - Aug 2020*

 - Facilitated data operations to produce actionable intelligence from all primary and acute care facilities in Singapore amidst a Covid-dominated climate.
 - Utilized geospatial analytical tools (e.g. clustering, interpolation) on patient-level data to seek localised health trends to inform real-time policy decisions.
 - Assisted in nationwide COVID-19 hospital operations and other health services operations related to COVID-19.
- Data Analysis Research Assistant** **Berlin, Germany**

◦ *Hertie School Data Lab* *Apr 2020 - Aug 2020*

 - Conducted data cleaning, scrapping and data intrapolation methods to estimate migrant deaths and corresponding risk indicators in the Mediterranean
 - Employed R for data wrangling to prepare data sets for regression analysis.
- CoronaNet Research Assistant** **Munich, Germany**

◦ *Technical University Munich & New York University* *Mar 2020 - May 2020*

 - Collated government policies globally towards the CoronaNet: COVID-19 Government Response Tracking Project.
 - Established a global database for a concerted effort to compare and contrast national policies for epidemiology and public policy research to seek effective strategies to combat the COVID-19 situation worldwide.
 - The database was utilized to present key COVID-19 related policy intelligence to key international stakeholders, including the Canadian Prime Minister.
- Financial Security Policy Intern** **Singapore**

◦ *Singapore Ministry of Social and Family Development, ComCare and Social Support Division* *May 2018 - Aug 2018*

 - Presented on the handholding strategies globally to re-imagine case-management for Singapore's welfare clients.
 - Drafted recommendations against the idea of micro-tasks in providing stable employment for low-income mothers.
 - Investigated the feasibility of social predictive analytics to reduce welfare dependency of high-risk individuals.
- Emergency Medical Technician** **Durham, USA**

◦ *Durham Technical Community College* *Jan 2017 - Nov 2017*

 - Successfully completed over 200 didactic, laboratory and clinical hours as an emergency care provider.
 - Served at Duke University Hospital Emergency Care, Orange County Emergency Medical Services and Durham Fire Department.
- Full Lieutenant, Air Warfare Officer (Ground-Based Air Defense)** **Singapore**

◦ *Republic of Singapore Air Force* *Feb 2015 - Aug 2016*

 - Sword of Honour Recipient - Commissioned as the top Officer Cadet of the 99/15 Officer Cadet Course (Airforce).
 - Led and mentored 21 men in day-to-day trainings, missions and nationwide exercises as a RBS-70 Platoon Officer.
 - Undertook and planned for Singapore's 24/7 National Air Defense operational duties
 - Liaison officer for the Singaporean National Day Parade '16.

Awards & Scholarships

- **Walter J. Seeley Scholastic Award** **Durham, USA**
2019
Pratt School of Engineering, Duke University
- Presented by the Dean of the Pratt School of Engineering for graduating as Duke University's top performing engineer in the Pratt School of Engineering.
 - Other awards: Audrey E. Palmer Award, Dean's List with Distinction (All Semesters)
- **Tau Beta Pi Membership** **Durham, USA**
2019
Pratt School of Engineering, Duke University
- Tau Beta Pi is the engineering honor society representing engineers in the USA.
 - Conferred to engineering students for distinguished scholarship and exemplary character.
- **Sword of Honour Recipient** **Singapore**
2016
Officer Cadet School, Singapore Armed Forces
- Bestowed by the President of the Republic of Singapore for graduating as the top officer cadet in the 99/15 Officer Cadet Course (Airforce) of 70 cadets.
 - Other awards: Distinguished Graduate Award (Ground-Based Air Defense), Top in Knowledge, Top in Conduct.

Research

Publication.....

- Rocha-Melogno, L., Yoo, R., Broesicke, O., Kallergis, A., Garcia, J., Herbas, E., . . . Boey, D.,... Brown, J. (2019). Rapid drinking water safety estimation in cities: Piloting a globally scalable method in Cochabamba, Bolivia. *Science of the Total Environment*, 654, 1132-1145.

Research Papers.....

- **Predicting Policy Domains from Party Manifestos with BERT and CNNs** **Berlin, Germany**
2020
Hertie School of Governance
- Employed Natural Language Processing techniques (BERT, CNNs and GRUs) to automate the labelling process of political manifestos from seven different countries.
 - Demonstrated the effectiveness of a BERT-CNN model architecture for policy preference classification.
 - Tools: Python (PyTorch, scikit-learn)
 - Advisor: Prof. Slava Jenkin Mikhaylov, Professor of Data Science and Public Policy
- **Educational Data Analytics with Machine Learning** **Durham, USA**
2018
Pratt School of Engineering, Duke University
- Employed data analytic and machine learning tools on India's Unified-District Information System for Education data-set encompassing millions of schools across India.
 - Made use of causal inference theories to investigate possible causal linkages between school attributes and the students' performance in nationwide examinations in India.
 - Collaborated with educational non-profit Central Square Foundation.
 - Tools: R
 - Advisor: Prof. Mark Borsuk, Associate Professor of Civil and Environmental Engineering
- **Geospatial Mapping of Particulate Matter with Drones** **Beaufort, USA**
2017
Nicholas School of the Environment, Duke University
- Constructed an aerial platform for low-cost PM sensors to be mounted on small Unmanned Aerial Systems (sUAS).
 - Proved the feasibility and effectiveness of using sUAS for geospatial mapping of PM measurements.
 - Tools: MATLAB, ArcGIS, Mission Planner, R
 - Advisor: Prof. David Johnston, Associate Professor of the Practice of Marine Conservation & Ecology

Skills & Interests

Analytical Skills.....

- **Econometric & Causal Analysis:** Regression Analysis, Instrumental Variables, Regression Discontinuity Design, Panel Data, Fixed Effects Models
- **Machine Learning:** Neural Networks, Natural Language Processing
- **Optimization and Modelling:** Constrained and unconstrained optimization, NMA
- **Time Series Analysis:** Filtering, Spectral Analysis
- **Geospatial Analysis:** Geocoding, Distance and Travel APIs, Spatial Statistics, Clustering
- **Qualitative Analysis:** Stakeholder Analysis, Problem, Objective and Alternative Analysis, Logical Frameworks, Theory of Change

Programming.....

- **Programming:** R, Python, MATLAB, Stata
- **Visualization and Dynamic Dashboarding Software:** R (Shiny, FlexDashboards, Plotly, Leaflet), Tableau, ArcGIS, Lucidchart, PowerBI
- **Geographical Information Systems:** R, ArcGIS
- **Specialized Software:** L^AT_EX, Mission Planner (Drone Programming), EdGCM (Climate Change Modelling)

Certifications.....

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| ○ Unmanned Aerial System Remote Pilot Certification | New Bern, USA |
| ○ <i>US Federal Aviation Administration</i> | <i>November 2017</i> |
| ○ Emergency Medical Technician | New York, USA |
| ○ <i>US National Registry of Emergency Medical Technicians</i> | <i>September 2017</i> |

Languages.....

- English (Fluent), Mandarin (Fluent), German (B1 - Intermediate), Spanish (Conversational)

Interests.....

- Rock Climbing: Bouldering and Lead Climbing
- Cooking: Singaporean and Chinese cuisine
- Outdoor activities: Hiking and Diving
- Races: Completed half-marathons on three continents