

## Education and Exams

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### *Brigham Young University*

Master of Science, Civil and Environmental Engineering Dec 2021

- Emphasis in water resources driven by remote sensing data and hydrologic and hydraulic modeling
- Research fully funded by NASA's SERVIR project in the Amazonia Hub

Bachelor of Science, Civil and Environmental Engineering - 3.50 GPA Apr 2020

- Senior design project: International work with Dominican Republic's national water office, INDRHI
- GIS, Hydrologic Modeling, Geotech Earthquake Engineering

*NCEES Fundamentals of Engineering Exam, EIT* Nov 2019

*GRE Verbal 161, Quantitative 165, Writing 4* Jan 2020

## Publications

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Global Water Sustainability Tools from Earth Observations for the Americas. AGU Fall meeting 2019.

<https://agu.confex.com/agu/fm19/meetingapp.cgi/Paper/585941>

Developing a drought monitoring and sub-seasonal to seasonal forecast system for South Asia. AGU Fall Meeting 2019. <https://agu.confex.com/agu/fm19/meetingapp.cgi/Paper/597593>

Enabling Stakeholder Decision-Making with Earth Observation and Modeling Data Using Tethys Platform. Frontiers in Environmental Science, 2019. <https://doi.org/10.3389/fenvs.2019.00148>

## Work Experience

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*BYU Hydroinformatics Lab – Researcher* Apr '18 – Present

GEOGloWS ECMWF Global Streamflow Service

- Contributed to creating a daily operational, deterministic global hydrologic ensemble forecasting model
- Collaborated with ESRI, ECMWF to move research project to a fully operational professional environment
- Developed a REST API deployed at ECMWF for programmatic access to hydrologic modeling as a service
- Programmed a python package and web apps which facilitate access to the model results

Hydrometeorological Data Web Apps

- Create a flexible, extensible web application to show gridded earth observation datasets
- Managed cloud computer resources and architecture, international deployment of products
- Published GIS python package and web apps, and engineered scientific data processing workflows
- Trained NASA sponsors and leaders of international hydrometeorology organizations

Disease Spread Prediction- Collaboration with Johns Hopkins University

- Researched with an interdisciplinary team predicting malaria and enteric disease spread
- Used remote sensing forecast data and land surface modeling to produce ensemble predictions of risk
- Developed a web app make the modeling results accessible to stakeholders in India and Peru

*BYU Geomatics (GIS and Surveying) Teaching Assistant* May '17 – May '18

- Personally developed 13 lab assignments to teach surveying and GIS skill, and a final exam
- Responsible for grading, teaching weekly labs and review sessions, handling sensitive information

*RCH Engineering PLLC – Founder* Jan 2018

- Consultant for civil engineering, IT services, website management, technology to Arizona businesses
- Produced CAD models and renderings of proposed building interior, exterior renovations
- Independently seek jobs, quote prices, manage business relationships with professionals

*Kevin Rose Professional Cleaning Services* Apr '14 – Aug '14

- Clean homes and businesses to a high professional standard with and without teams
- Maintained business relationship with clients through personal interactions and regular reports, emails

- Trusted with building keys, alarm codes, and security of personal and business property

## **Volunteer/Service Experience**

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### *ASCE BYU Student Chapter Leadership (Networking Committee) Apr '18 – Apr '19*

- Plan and coordinate networking events with engineering companies, students, BYU
- Volunteer service to local K12 schools and after school programs promoting STEM
- Spent several hours per week planning and/or hosting events to serve other students

### *BYU ASCE Concrete Canoe Team Aug '17 – Present*

- Engineered and tested concrete specimens used in competition at national ASCE competitions
- Participated in preparation and construction of the concrete canoe used in races

### *Volunteer Missionary - Church of Jesus Christ of Latter-Day Saints Jan '15 – Dec '15*

- Unpaid, Full-time, representative of an international church and its practices in North Italy
- Responsible for daily interactions with diverse cultures, languages, religions, educations
- Taught daily lessons to church members and leaders, and others interested in scripture study
- Taught English and Italian reading and writing skills to refugees, immigrants, and Italians

## **Skills and Accomplishments**

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- GIS analysis in QGIS and ESRI products
- Historical and Statistical model analysis
- Scientific computing and data science
- Cloud computing on Azure and AWS
- Microstation, OpenRoads, WMS
- Boy Scouts of America Eagle Scout- 3 palms
- Multilingual- English, Spanish, Italian
- Ethical, Dependable, Team-Oriented, Self-Motivated, Organizational skills