

FORREST WILLIAMS

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Ankeny, Iowa

EDUCATION

PhD	Massey University: Palmerston North, New Zealand Major: Earth Science, GPA: Not applicable	2022
MS	Iowa State University: Ames, Iowa USA Graduate Certificate in GIS Major: Environmental Science, GPA: 3.77	2019
BA	Carleton College: Northfield, Minnesota USA Major: Geology, GPA: 3.54	2016

SOFTWARE DEVELOPMENT AND RESEARCH EXPERIENCE

Research Software Engineer, Alaska Satellite Facility:	Remote	April 2022 to Present
<ul style="list-style-type: none">- Working within a software engineering team to design new SAR/InSAR products and services- Developing cloud-native serverless (AWS) workflows to efficiently scale scientific research		
PhD, Massey University:	Palmerston North, NZ	2019 to 2022
<ul style="list-style-type: none">- Using Python, HyP3 tools and Sentinel-1 SAR data to monitor natural hazards- Developed utilities that allow MintPy to ingest HyP3 InSAR products- Planned and led student workshops as a university student leader		
NASA Jet Propulsion Laboratory Research Affiliate:	Remote	July 2021 to Dec 2021
<ul style="list-style-type: none">- Using a Linux\Python workflow to monitor earthquakes and landslides via a high-resolution InSAR analysis		
Assistant Scientist, Iowa State University:	Ames, Iowa USA	2019 to 2020
<ul style="list-style-type: none">- Designed and built a Google Earth Engine field-validated machine learning model that predicts crop residue coverage within the Midwest's agricultural landscape		
MS, Iowa State University:	Ames, Iowa USA	2017 to 2019
<ul style="list-style-type: none">- Designed and built an ArcPython toolbox that uses high resolution inland surface water detection to track the movement of rivers and estimate their sediment contributions- Led and supervised a team of three students during a multi-year field research project		

REMOTE SENSING AND DATA SCIENCE EXPERIENCE

Developer and Maintainer: [Z-RAN](#) random-access compression utility, Aerial Imagery Migration Model ([AIMM](#))
Contributor: MintPy, ISCE2, HyP3 (e.g. MintPy PR [#542](#))
Programming Platforms: Python, AWS, GitHub Actions, Linux, Git, GDAL, SQL
Analysis Types: InSAR, SAR, Optical Imagery, Change Detection, Terrain Analysis
Visualization Tools: Jupyter Notebooks/Lab, Matplotlib, Seaborn, Plotly

SELECT PUBLICATIONS

"Automated measurement of eroding streambank volume from high-resolution aerial imagery and terrain analysis"

F Williams, P Moore, T Isenhardt, M Tomer - Geomorphology, 2020

"Intersection of fluvial incision and weak geologic structures cause divergence from a universal threshold slope model of landslide occurrence"

F Williams, S McColl, I Fuller, A Neverman, C Hughes, C Massey - Geomorphology, 2021