

# Nick Ulle

PHD CANDIDATE, STATISTICS

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## Education & Skills

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### University of California, Davis

2012 – 2019 (expected)

PH.D. IN STATISTICS

Davis, CA

- Tentative Dissertation Title: “Source Code Analysis and Type Inference for the R Language”
- Advisor: Duncan Temple Lang

### University of California, San Diego

2008 – 2011

B.S. IN MATHEMATICS — PROBABILITY AND STATISTICS

La Jolla, CA

**Programming Languages** R · Python · Matlab · SAS · Lua · Shell · C/C++ · Rust

**Certifications** Software Carpentry Instructor · Society of Actuaries Exam P · Society of Actuaries Exam FM

## Teaching

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### INSTRUCTED

#### Technologies for Data Analysis

Winter 2019

ASSOCIATE INSTRUCTOR

Davis, CA

- Designed all course materials and led all lectures.

#### Fundamentals of Statistical Data Science

Fall 2018

ASSOCIATE INSTRUCTOR

Davis, CA

- Designed all course materials and led all lectures.

#### Introduction to Data Exploration with R

Spring 2016

ASSOCIATE INSTRUCTOR

Davis, CA

- Part of the UC Davis Data Studies program.
- Planned curriculum, designed all course materials, and led all lectures.

#### Elementary Statistics

Summer 2014

ASSOCIATE INSTRUCTOR

Davis, CA

- Designed all course materials and led all lectures.

### ASSISTED WITH

#### Practice in Statistical Data Science

Spring 2018

LEAD TEACHING ASSISTANT

Davis, CA

- Guided undergraduates to completion of quarter-long capstone projects.

### Also a TA for

Statistical Computing (x3) · Fundamentals of Statistical Data Science (x2) · Multivariate Data Analysis  
Probabilistic Modeling · Probability Theory · Technologies for Data Analysis (x2) · Elementary Statistics

# Research

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**Interests** · Scientific Computing Infrastructure · Program Analysis · Programming Language Design · Statistics Pedagogy

I study how to design and build effective infrastructure for scientific computing, particularly programming languages for statistics.

## SELECTED PAPERS & SOFTWARE

### Analysis and Transformation of R Code

In Preparation

C. FITZGERALD, N. ULLE, D. TEMPLE LANG, M. ESPE

### RTypeInference

N. ULLE AND D. TEMPLE LANG

- Tools to infer the types of expressions in R code.
- <https://github.com/duncantl/RTypeInference>

### rstatic

N. ULLE AND D. TEMPLE LANG

- A framework for static analysis of R code.
- <https://github.com/nick-ulle/rstatic>

## PRESENTATIONS

### An LLVM-based Compiler Toolkit for R

Summer 2017

USER! 2017 CONFERENCE

Brussels, Belgium

## OTHER EXPERIENCE

### Data Science Initiative, UC Davis

Summer 2016

GRADUATE STUDENT RESEARCHER

Davis, CA

- Collaborators: Jacob Hibel · Mairaj Syed · Duncan Temple Lang
- Developed tools to extract structured data from Portable Document Format (PDF) files.
- Extracted budget data for over 400 California K-12 schools from PDFs of their Local Control and Accountability Plans.
- Designed a database of narratives from the Islamic oral tradition and developed a web scraper to populate it.

### Data Science Initiative, UC Davis

Summer 2015

GRADUATE STUDENT RESEARCHER

Davis, CA

- Collaborators: Allan Hollander · Courtney Riggle · Duncan Temple Lang
- Developed a Shiny app for the UC Davis Agricultural Sustainability Institute.

### Department of Statistics, UC Davis

Summer 2013

GRADUATE STUDENT RESEARCHER

Davis, CA

- Principal Investigator: Duncan Temple Lang
- Created benchmark code for realistic performance evaluation of Oracle Labs' FastR project.

# Service

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## AFFILIATIONS

### Data Science Initiative, UC Davis

2015 – Present

AFFILIATE

- Regularly assisted with public workshops designed to teach data science skills to students and faculty.
- Contributed to the development and maintenance of the initiative's website.
- Participated in reading groups, discussion groups, and hackathons.

### Statistics Research Training Group, UC Davis

2012 – Present

GRADUATE STUDENT MENTOR

- Mentored undergraduates working on cross-disciplinary research projects.
- Recruited promising students for the undergraduate training program.

## WORKSHOPS

2018	<b>Introduction to SQL</b> , Data Science Initiative, UC Davis	Davis, CA
2017	<b>Introduction to R Markdown</b> , Research Training Group, UC Davis	Davis, CA
2017	<b>Python for Data Analysis, Part II</b> , Data Science Initiative, UC Davis	Davis, CA
2017	<b>Web-scraping: R versus Python</b> , Statistics Club, UC Davis	Davis, CA
2015	<b>Python for Data Mining</b> , Research Training Group, UC Davis	Davis, CA

## OTHER ACTIVITIES

2018	<b>Judge</b> , DataFest, Data Science Initiative, UC Davis	Davis, CA
2016	<b>Reviewer</b> , Journal of Statistical Software	
2016	<b>Volunteer</b> , UseR! 2016 Conference	Stanford, CA
2016	<b>Judge</b> , Data Science Competition, iidata Convention, UC Davis	Davis, CA
2015	<b>Reviewer</b> , Journal of Statistical Software	
2014	<b>Volunteer</b> , UseR! 2014 Conference	Los Angeles, CA
2010	<b>Officer</b> , Actuarial Society, UC San Diego	La Jolla, CA

## Honors

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### TEACHING

2017	<b>Excellence in Graduate Student Teaching Award</b> , Department of Statistics, UC Davis
2016	<b>Outstanding Graduate Student Teaching Award</b> , UC Davis
2015	<b>Teaching Recognition Award</b> , Department of Statistics, UC Davis
2014	<b>Teaching Recognition Award</b> , Department of Statistics, UC Davis

### RESEARCH

2018	<b>Summer Research Fellowship</b> , Department of Statistics, UC Davis
2017	<b>Summer Research Fellowship</b> , Department of Statistics, UC Davis
2016	<b>Summer Research Fellowship</b> , Department of Statistics, UC Davis
2015	<b>Summer Research Fellowship</b> , Department of Statistics, UC Davis
2012	<b>Research Training Grant</b> , Department of Statistics, UC Davis