

# Brooke K. Ryan

Graduate Student in Computer Science | Artificial Intelligence Researcher  
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## EDUCATION

### UC IRVINE

#### M.S. COMPUTER SCIENCE

Sept. 2020 | Irvine, CA

Advisor: Pierre Baldi

GPA: 3.82 / 4.0

### UC SAN DIEGO

#### B.S. MATHEMATICS-COMPUTER SCIENCE

2013 - 2017 | La Jolla, CA

GPA: 3.4 / 4.0

## SKILLS

### MACHINE LEARNING

Deep Learning Libraries:

Keras • Tensorflow • PyTorch

• OpenCV • WandB

Natural Language Processing:

AllenNLP • HuggingFace • SpaCy

• NLTK • Stanford Core NLP

Data Science:

NumPy • Scikit-Learn • Pandas

Distributed Computing:

CUDA • Sun Gird Engine • Linux

• Unix • Bash • AWS

### SOFTWARE ENGINEERING

Programming Languages:

Python • Java • C++ • C • Kotlin

• Scala • JavaScript • Ruby • HTML

• CSS • SQL •  $\LaTeX$  • Bash • Shell

Miscellaneous:

Git • Command Line • Scripting

• Jekyll • Back-end engineering

• Web Development • Raspberry Pi

• Arduino • Functional Programming

## HONORS & AWARDS

### FELLOWSHIPS

UC Irvine Teaching Assistant

Fellowship | \$56,000

### AWARDS

CBS Interactive Company-Wide

Hackathon, First Place | \$1,000

Provost Honors, UC San Diego

## TEACHING

Information Retrieval • Reverse

Engineering and Modeling • Program-

ming Styles • Humanitarian Engineering

Girls Who Code Summer Immersion

## RESEARCH

### DEEP LEARNING & VISION | PIERRE BALDI & ANDREW BROWNE

Mar. 2021 – Present | Irvine, CA

- Lead student in interdisciplinary research project with UCI Ophthalmology School investigating the parallels between machine and human vision using deep learning and human subject experiments.
- Investigated several deep generative models STAR-GAN, EDSR, deep autoregressive generative models. Applied image augmentation, experimented with modification of the architecture, optimized EDSR model using SHERPA hyperparameter optimization.

### SOFTWARE ENGINEERING | ANDRÉ VAN DER HOEK

Feb. 2021 – Present | Irvine, CA

- Identified a gap in the software engineering curriculum; researched and wrote up techniques of leveraging existing source code to develop software for other universities wishing to implement a similar course.

## EXPERIENCE

### BLIZZARD ENTERTAINMENT | SOFTWARE ENGINEER

Jan. 2020 - Feb. 2021 | Irvine, CA

- Backend Java engineer in the Battle.net and Online Products organization, delivering eCommerce APIs and capabilities on the Purchase team.
- Implemented critical Purchase-system APIs to implement functionality to support several new payment methods and platforms in Korea region; co-presented an organization-wide talk on the project and methodologies used.

### INTUIT | SOFTWARE ENGINEER

Aug. 2017 – Nov. 2018 | San Diego, CA

- Backend Java engineer; delivered Identity capabilities across Intuit products.
- Created Spring "Annotator" tool, automatically converts any Spring XML project to equivalent annotation configuration. Gave organization-wide tech talk; open-sourcing for over 10,000 Intuit employees.
- Led Identity team to improve speed and stability of CICD test and build cycle. Researched strategies to address infrastructure issues, implemented automated build jobs for visibility on flaky tests. Decreased build by 1.5 hrs.

### INTUIT | SOFTWARE ENGINEERING INTERN

June 2016 - Sept. 2016 | San Diego, CA

- Intern on iOS TurboTax application team, focus in Java and React Native.

### CBS INTERACTIVE | SOFTWARE ENGINEERING INTERN

June 2015 - Aug. 2015 | San Francisco, CA

- Front-end software engineering intern on the Advanced Technology Team.

## PUBLICATIONS

### IN PROGRESS

- [1] B. K. Ryan, A. M. Soria, and A. van der Hoek. Reading to write code: An experience report of reverse engineering and modeling. (*Submitted*), October 2021.
- [2] B. K. Ryan, A. Vu, D. Harris, A. Browne, and P. Baldi. Visual acuity: In humans and machines. (*In Progress*), November 2021.