

# Learning Programming at Scale

Summary of Philip Guo's recent research projects  
All papers available at <http://pgbovine.net/publications.htm>

Conversational programmers  
[VL/HCC 2015][CHI 2016][CHI 2018]

Hackathon participants  
[ICER 2017]

Women in coding forums  
[FSE 2016]

Older adults aged 60+  
[CHI 2017]

Non-native English speakers  
[CHI 2018]

Culture, values, & debugging  
[VL/HCC 2018]

Understanding  
Diverse Learners

Visualizing code execution  
[SIGCSE 2013] [UIST 2017]

One-on-one live help  
[VL/HCC 2015]

One-to-many code tutoring  
[UIST 2015]

Scaffolding pair programming  
[CHI 2017]

Data science using the web  
[UIST 2017]

Web UI prototyping  
[UIST 2018]

Building Programming  
Environments

Browsing digital textbooks  
[EDM 2015]

Discussing code in forums  
[VL/HCC 2015]

Learners annotating code  
[VL/HCC 2015] [VL/HCC 2017]

Programming tutorial videos  
[Learning@Scale 2018]

Creating multi-app tutorials  
[UIST 2017]

Profiling multi-app tutorials  
[UIST 2018]

Redesigning  
Programming Tutorials