

Learning Programming at Scale

Female StackOverflow users
[FSE 2016]

Hackathon participants
[ICER 2017]

Non-programmers
[VL/HCC 2015][CHI 2016][CHI 2018]

Older adults aged 60+
[CHI 2017]

Non-native English speakers
[CHI 2018]

Understanding
Diverse Learners

Visualizing code execution
[SIGCSE 2013] [UIST 2017]

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

One-to-many tutoring
[UIST 2015]

Remote pair programming
[CHI 2017]

Web-based data science
[UIST 2017]

Building Programming
Environments

Browsing digital textbooks
[EDM 2015]

Discussing code in forums
[VL/HCC 2015]

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

Multi-application tutorials
[UIST 2017]

Screencast tutorial videos
[Learning@Scale 2018]

Redesigning
Programming Tutorials