Keynote

Democratizing Programming with Blocks Languages

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Abstract: **In blocks programming languages (such as Scratch, Blockly, App Inventor, Snap!, Pencil Code, Alice/Looking Glass, AgentSheets/AgentCubes), programs are constructed by connecting visual blocks shaped like puzzle pieces. Through activities like Code.org's Hour of Code and both online and traditional courses, these languages have become extremely popular ways to introduce programming and computational thinking to tens of millions of people of all ages and backgrounds. By lowering barriers to programming in key programming language dimensions (syntax, static semantics, and dynamic semantics), blocks languages are helping to democratize programming by putting the power of programming in the hands of nonexperts. In my talk, I will focus on blocks language work done in the context of MIT App Inventor and the Wellesley College TinkerBlocks research project. Despite recent advances in blocks languages, there are still many challenges to address, including enhancing their usability and expressiveness, developing paths for transitioning to more traditional programming, and dealing with the perception that they are just toy languages for kids. I encourage members of the DMS community to join me in investigating these challenges.**

About the Speaker: **Franklyn Turbak is an associate professor of Computer Science at Wellesley College. His interests include the design, analysis, and implementation of expressive programming languages and visual representations of programs and computational processes. He is co-author of the textbook Design Concepts in Programming Languages. As head of the Wellesley TinkerBlocks research group, member of the MIT App Inventor development team, and lead PI on the NSF-funded Computational Thinking Through Mobile Computing project, his current goal is to improve the expressiveness and pedagogy of blocks programming languages.**