

Data Driven Malware Detection
(Technical Report)

Effective Special Education Advocacy in the United States
(STS Research Paper)

An Undergraduate Thesis Portfolio
Presented to the Faculty of the
School of Engineering and Applied Science
In Partial Fulfillment of the Requirements for the Degree
Bachelor of Science in Computer Science

by

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May 10, 2021

Preface

Agreed-upon practices for identifying and accommodating students who are “at risk” are few to none. Researchers must therefore investigate how at-risk populations, such as students with special learning needs, can be better identified and accommodated.

As software of growing complexity proliferates, vulnerable code, unknown exploits, and malicious activity bear greater risks and become harder to detect. Under Dr. Yuan Tian and in collaboration with other teams at UCSB and Google, the research team studied deep learning methods to determine how, if at all, semantic and syntactic data about a group may be used to determine which members are vulnerable. We found that, much like the human mind, software systems are infinitely complex, complicating security. We concluded that no single solution or algorithm currently exists for “correctly” screening code and identifying vulnerabilities.

United States federal law guarantees all students, regardless of their learning needs, access to an “equal and appropriate” public education. Yet public education in the U.S. fails to deliver on this promise for a substantial share of the nation’s youth. Most students are either overlooked completely or are left with unmet educational needs. The problem is the shared responsibility of federal and state agencies, school districts, educators, parents, and other education advocates. Study of this problem may disclose paths that lead to better special education in U.S. public education.

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