

Turing Award Relationship

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UNBC

October 15, 2018

PhD Advisor-Student Relationship

```
// Relationship
"Alonzo Church" -- "Alan Turing";
"Alonzo Church" -- "Michael Rabin (1976)";
"Alonzo Church" -- "Dana Scott (1976)";
"Claude Shannon" -- "Ivan Sutherland (1988)";
"Howard Aiken" -- "Kenneth Iverson (1979)";
"Howard Aiken" -- "Frederick Brooks (1999)";
"John McCarthy (1971)" -- "Dabbala Reddy (1994)";
"John McCarthy (1971)" -- "Barbara Liskov (2008)";
"Herbert Simon (1975)" -- "Edward Feigenbaum (1994)";
"Marvin Minsky (1969)" -- "Manuel Blum (1995)";
"Robert Floyd (1978)" -- "Ronald Rivest (2002)";
"Robert Floyd (1978)" -- "Robert Tarjan (1986)";
"Manuel Blum (1995)" -- "Shafi Goldwasser (2012)";
"Manuel Blum (1995)" -- "Silvio Micali (2012);
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GraphViz

- Command Line tool for drawing graphs
- Has two main models:
 - ▶ Hierarchical graph structuring
 - ▶ Spring/Force based structuring

GraphViz

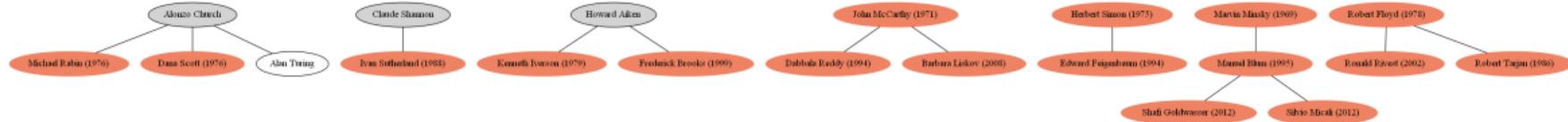
- Command Line tool for drawing graphs
- Has two main models:
 - ▶ Hirarchical graph structuring
 - ▶ Spring/Force based structuring
- Provides four main tools:
 - ▶ dot
 - ▶ neato
 - ▶ lefty
 - ▶ dotty

GraphViz

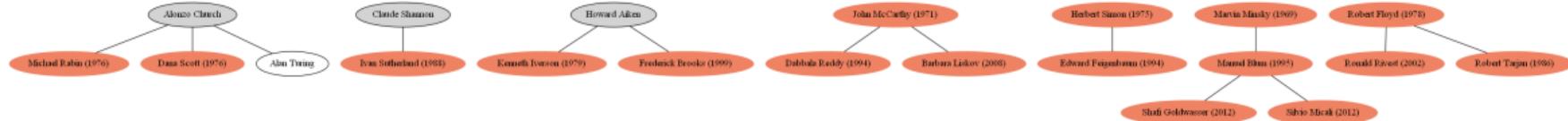
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First Graph



First Graph



Too disconnected...

First Hypothesis

First Hypothesis

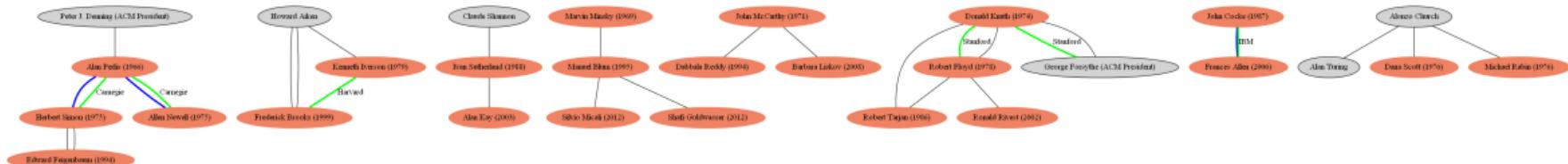
Graph should be more connected if I add the other relationships available in the book draft

First Hypothesis

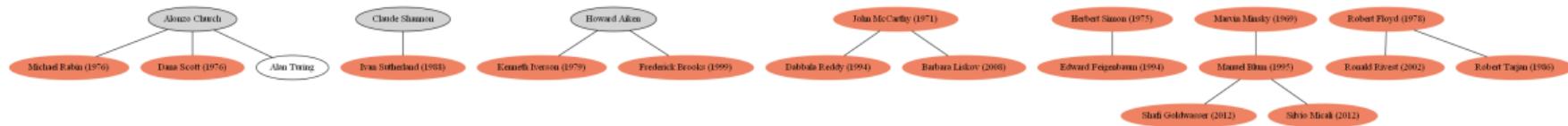
Graph should be more connected if I add the other relationships available in the book draft

- Co-authors
- Colleagues
- Prof-Student
- Necrologies/misc.

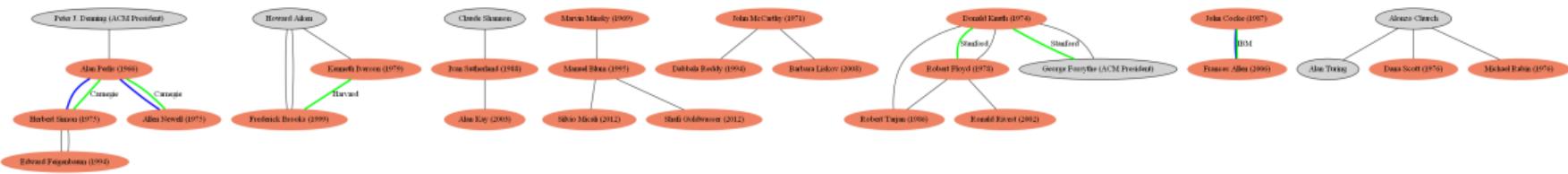
Second Graph



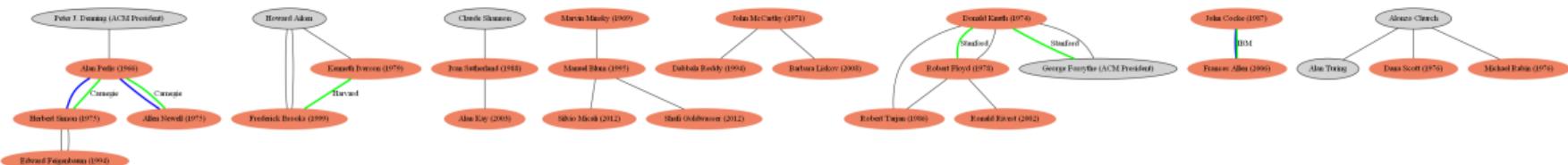
First Graph



Second Graph



Second Graph



Graph should be more connected if I add the other relationships available in the book draft

Third Graph

Need more data

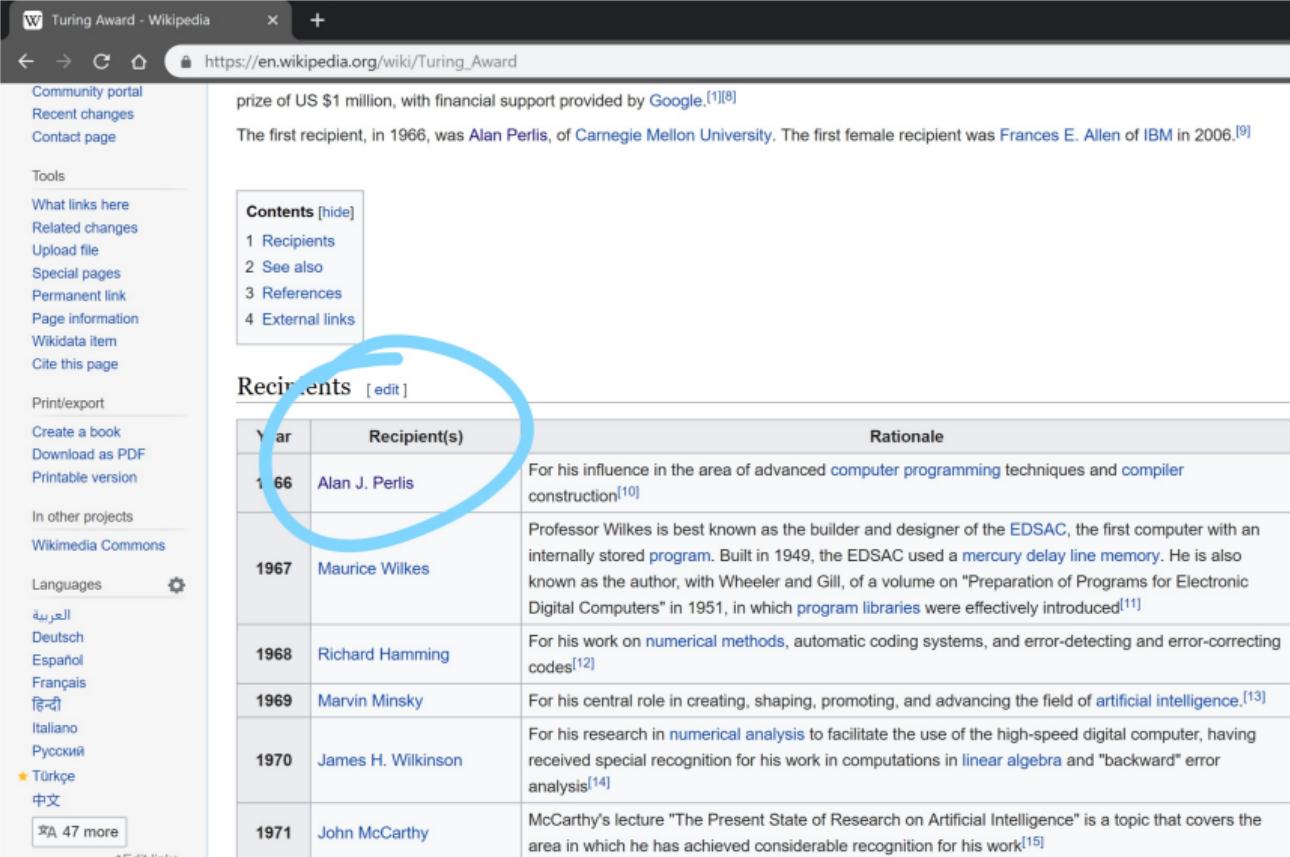
Third Graph

Need more data

Hypothesis 2: If I get the PhD supervisor(s) of every Turing awardee then I should get a more well constructed graph

Getting the Data

Getting the Data



The screenshot shows a web browser displaying the Wikipedia page for the Turing Award. The left sidebar contains navigation links such as 'Community portal', 'Recent changes', 'Contact page', 'Tools', 'What links here', 'Related changes', 'Upload file', 'Special pages', 'Permanent link', 'Page information', 'Wikidata item', 'Cite this page', 'Print/export', 'Create a book', 'Download as PDF', 'Printable version', 'In other projects', and 'Wikimedia Commons'. Below these are language options: العربية, Deutsch, Español, Français, हिन्दी, Italiano, Русский, ★ Türkçe, 中文, and a '47 more' button. A 'Edit links' button is also present.

The main content area shows the following text: "prize of US \$1 million, with financial support provided by Google.^{[1][8]} The first recipient, in 1966, was Alan Perlis, of Carnegie Mellon University. The first female recipient was Frances E. Allen of IBM in 2006.^[9]"

A blue circle highlights the 'Recipients' section of the table below:

| Year | Recipient(s) | Rationale |
|------|--------------------|--|
| 1966 | Alan J. Perlis | For his influence in the area of advanced computer programming techniques and compiler construction ^[10] |
| 1967 | Maurice Wilkes | Professor Wilkes is best known as the builder and designer of the EDSAC, the first computer with an internally stored program. Built in 1949, the EDSAC used a mercury delay line memory. He is also known as the author, with Wheeler and Gill, of a volume on "Preparation of Programs for Electronic Digital Computers" in 1951, in which program libraries were effectively introduced ^[11] |
| 1968 | Richard Hamming | For his work on numerical methods, automatic coding systems, and error-detecting and error-correcting codes ^[12] |
| 1969 | Marvin Minsky | For his central role in creating, shaping, promoting, and advancing the field of artificial intelligence. ^[13] |
| 1970 | James H. Wilkinson | For his research in numerical analysis to facilitate the use of the high-speed digital computer, having received special recognition for his work in computations in linear algebra and "backward" error analysis ^[14] |
| 1971 | John McCarthy | McCarthy's lecture "The Present State of Research on Artificial Intelligence" is a topic that covers the area in which he has achieved considerable recognition for his work ^[15] |

Getting the Data

Turing Award - Wikipedia Alan Perlis - Wikipedia

https://en.wikipedia.org/wiki/Alan_Perlis

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1 Biography
2 Publications
3 See also
4 References
5 External links

Biography [edit]

Perlis was born to a Jewish family in Pittsburgh, Pennsylvania. He graduated from Taylor Allderdice High School in 1939.^[2] In 1943, he received his bachelor's degree in chemistry from the Carnegie Institute of Technology (later renamed Carnegie Mellon University). During World War II, he served in the U.S. Army, where he became interested in mathematics. He then earned both a master's degree (1949) and a Ph.D. (1950) in mathematics at Massachusetts Institute of Technology (MIT). His doctoral dissertation was titled "On Integral Equations, Their Solution by Iteration and Analytic Continuation".

In 1952, he participated in Project Whirlwind.^[3] He joined the faculty at Purdue University and in 1956, moved to the Carnegie Institute of Technology. He was chair of mathematics and then the first head of the computer science department. In 1962, he was elected president of the Association for Computing Machinery.

He was awarded the inaugural Turing Award in 1966, according to the citation, *for his influence in the area of advanced programming techniques and compiler construction*. This is a reference to the work he had done as a member of the team that developed the programming language ALGOL.

In 1971, Perlis moved to Yale University to become the chair of computer science and hold the Eugene Higgins chair. In 1977, he was elected to the National Academy of Engineering.

In 1982, he wrote an article, *Epigrams on Programming*, for Association for Computing Machinery's (ACM) SIGPLAN journal, describing in one-sentence distillations many of the things he had learned about programming over his career. The epigrams have been widely quoted.^[4] He remained at Yale until his death in 1990.

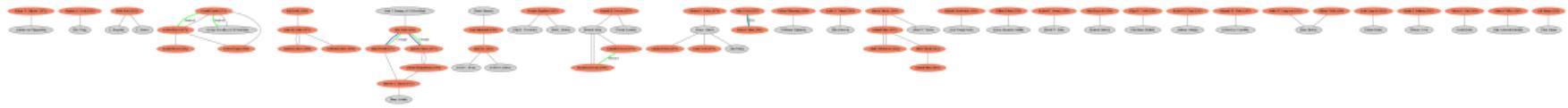
Publications [edit]

Publications, a selection:^[5]

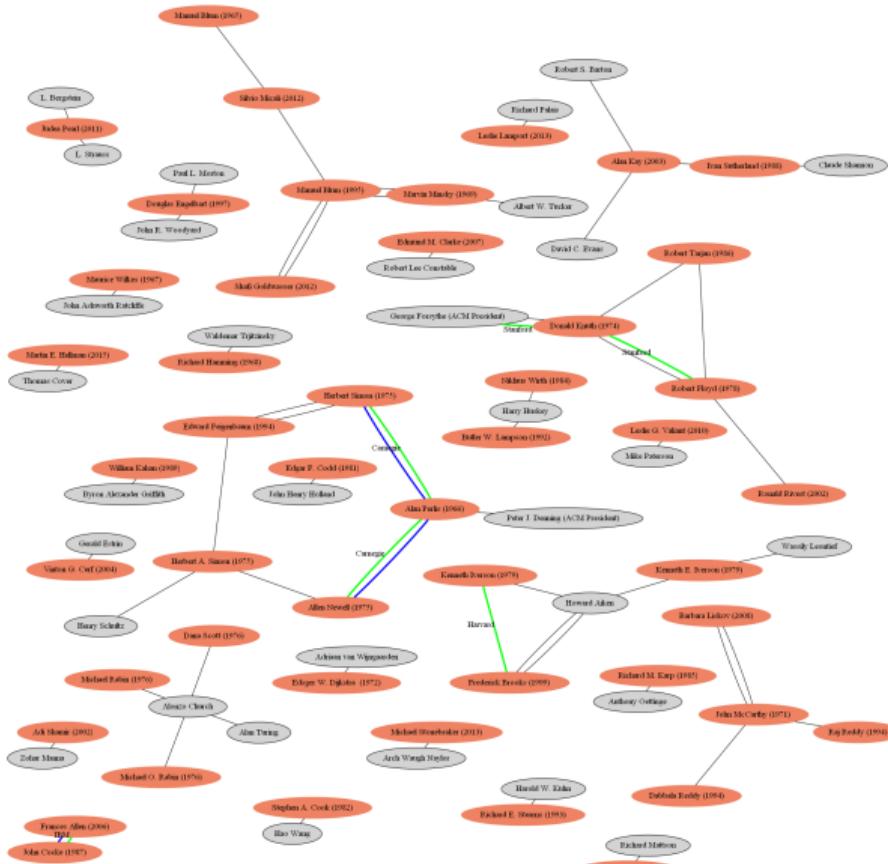
- 1965. *An introductory course in computer programming*. With Robert T. Braden.

Residence United States
Nationality American
Alma mater B.S., chemistry, Carnegie Mellon 1943
M.S., mathematics, MIT 1949
Ph.D., mathematics, MIT 1950
Known for IT
ALGOL
APL
Awards Turing Award, 1966
Computer Pioneer Award, 1985
Scientific career
Fields Computer science
Institutions Association for Computing Machinery
Carnegie Mellon University
Yale University
Purdue University
Thesis *Integral Equations, Their Solution by Iteration and Analytic Continuation* (1950)
Doctoral advisor Philip Franklin
Doctoral students Gary Lindstrom
Zoran Vidrana
David Parnas

Third Graph



Third Graph



Fourth Graph

What is a way that guarantees connection?

Fourth Graph

What is a good way that guarantees connection?

Fourth Graph

What is a good way that guarantees connection?

- Field of research

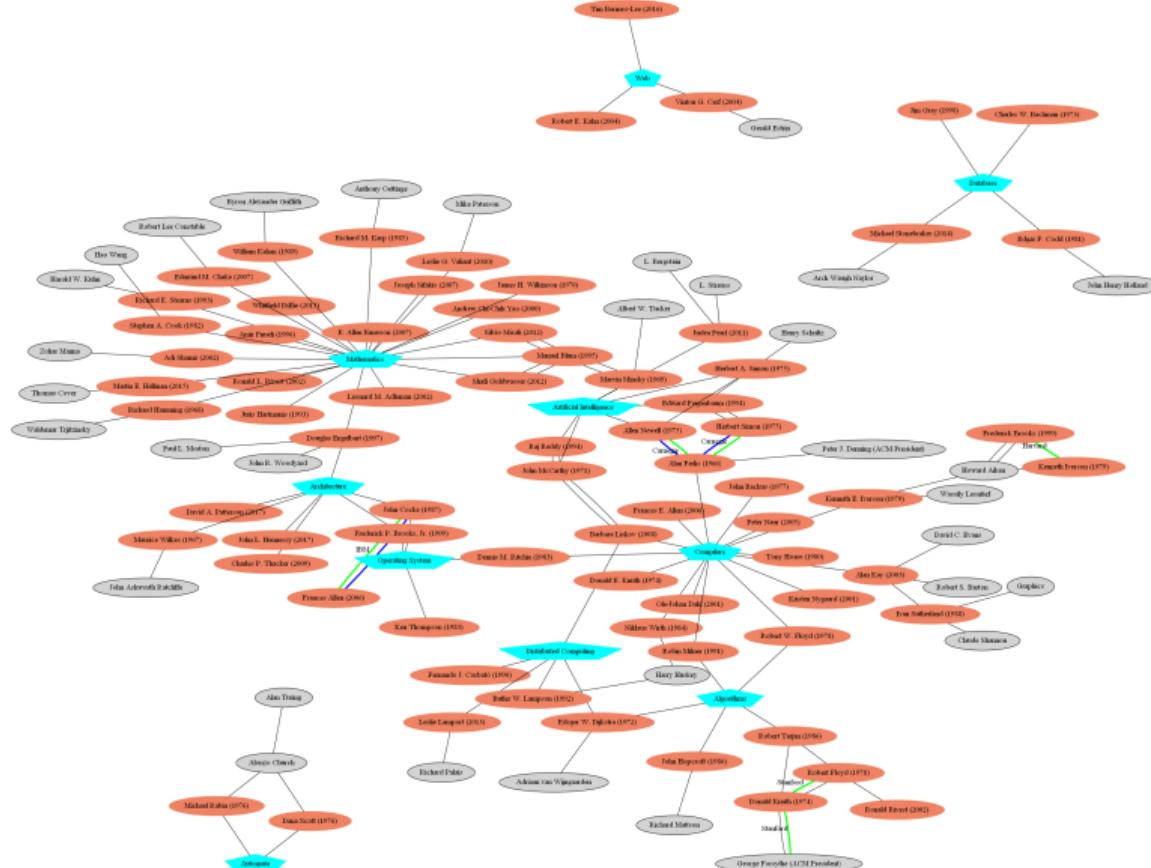
Fourth Graph

What is a good way that guarantees connection?

- Field of research

- ▶ Mathematics
- ▶ Compilers
- ▶ Web
- ▶ Architecture
- ▶ Algorithms
- ▶ Operating System
- ▶ Distributed Computing
- ▶ Mathematics
- ▶ Database
- ▶ Artificial Intelligence
- ▶ Automata

Fourth Graph



Fourth Graph

