

IPRO 304:

Integration of Process Improvements for A. Finkl and Sons Co.

Team Members

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Sponsor



FINKL
A. FINKL & SONS CO.

IPRO 304:

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The Problem

Goals

Organization

Progress

Obstacles

Challenges

Questions

A Finkl & Sons Co

- Founded 1879
- Processes 100,000 tons of steel annually
- Manufactures 100% of steel in Chicago
- Distributes to 18 countries around the world
- Steel Processes include
 - Melting
 - Re-melting
 - Forging
 - Heat Treating
 - Machining



A. Finkl & Sons Co., Chicago, IL
Finkl.com



Milling Machine in Operation
Kyle Gillmeister



Broken Insert
Kyle Gillmeister

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Milling

- Typically the last stage of processing before distribution

- Smoothing and Finishing

- Multi-Million dollar annual process

Milling Machine

- 100+ year old process

- 18" Diameter milling head

- 18 Tungsten carbide inserts per machine



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Operational Problems

- Broken Inserts
 - Multi-Million dollar problem
 - Causes stress to machine and other inserts furthering damage
 - Damages finish resulting in re-milling and time loss



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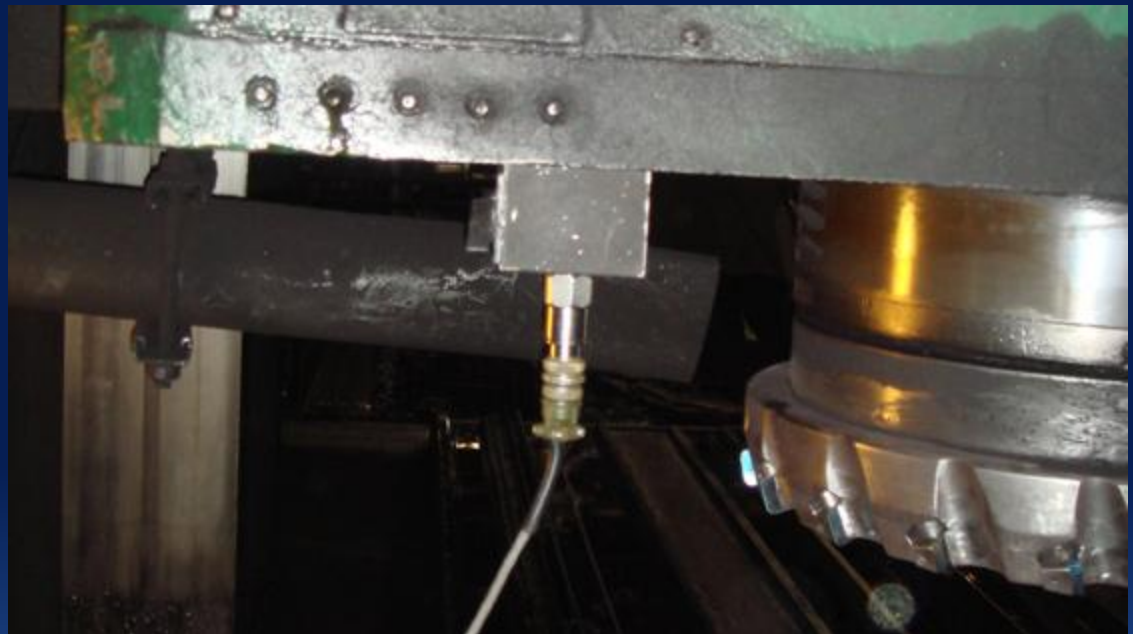
Obstacles

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Detect and Notify

- Build on previous semesters work
 - Use of accelerometers and data acquisition software (labView) to detect failure
 - Use of data analysis software (diaDEM) for real time notification



Accelerometer Mounted on Milling Machine

Kyle Gillmeister

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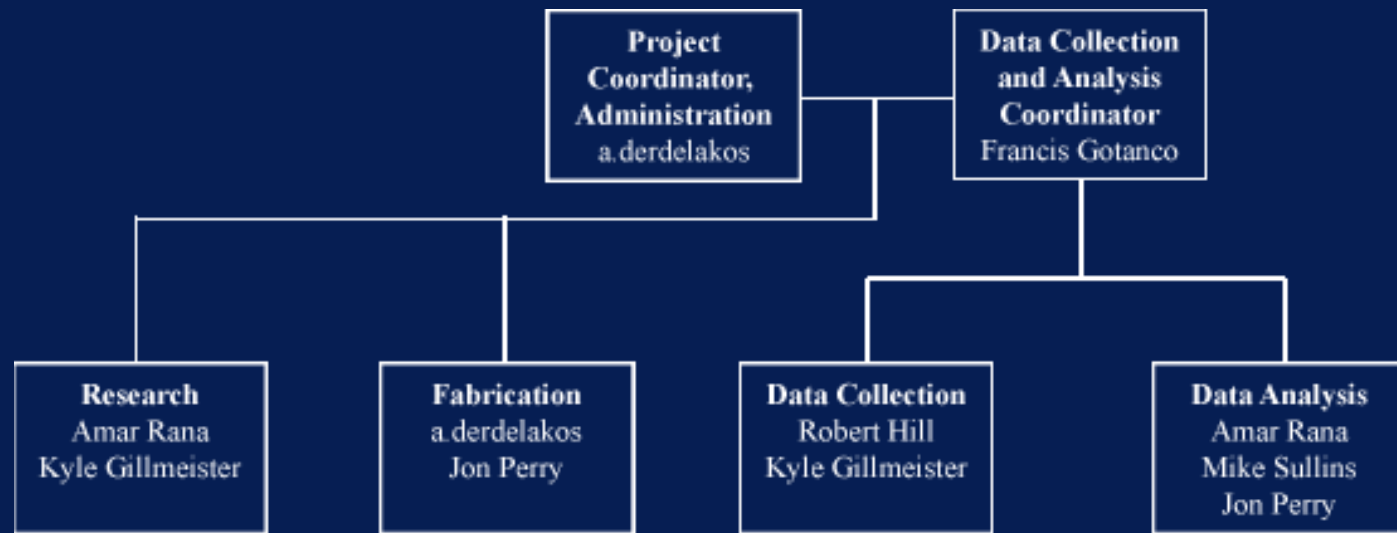
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Data Collection

- Data was collected at IIT's milling facility and A. Finkl & Sons main milling facility.

Data Analysis

- Data analysis began of previous semester's work.
- Continuation of analysis with new acquisition.



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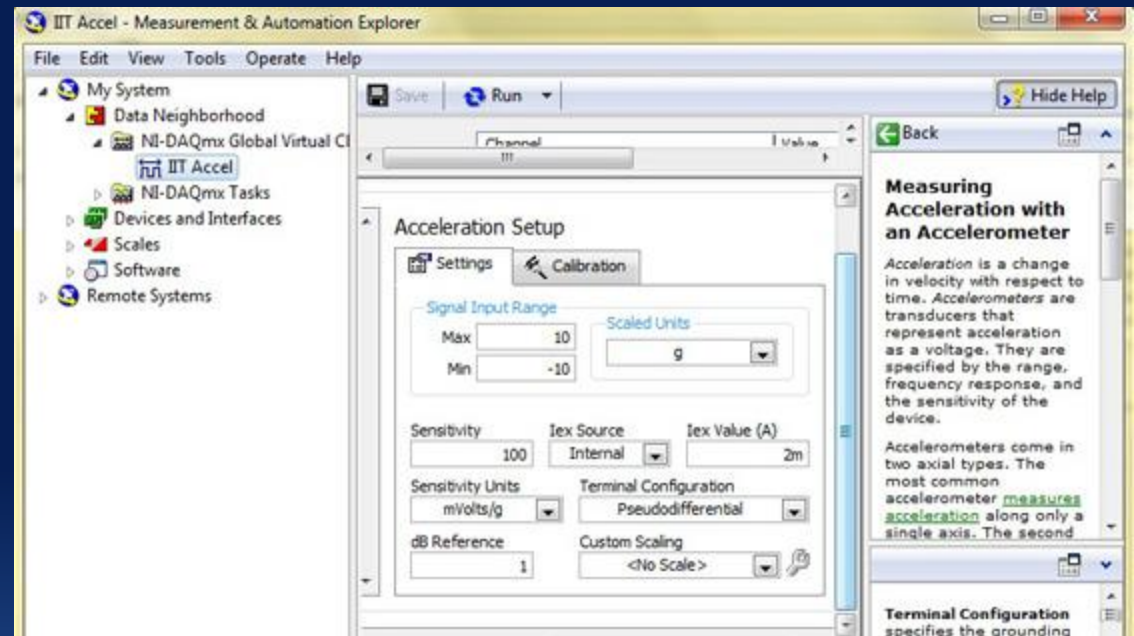
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- Comprehension of problem
 - Solved by meeting with former students
- Technical understanding of hardware and software
 - In process of solution by meeting with former students and technical experts



Screen Capture of LabView Data Acquisition Software.

Robert Hill

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- Scheduling
- Organization of data and administration
- Communication of ideas and insights between data acquisition and data analysis teams
- Expertise in fabrication of notification system



A.Finkl & Sons Co., Milling Facility

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We Welcome Question, Comments and Criticisms.



A.Finkl & Sons Co., Milling Facility

Kyle Gillmeister