

Dimensions of Defensibility: AI, Automation, and Building New Skills and New Opportunities

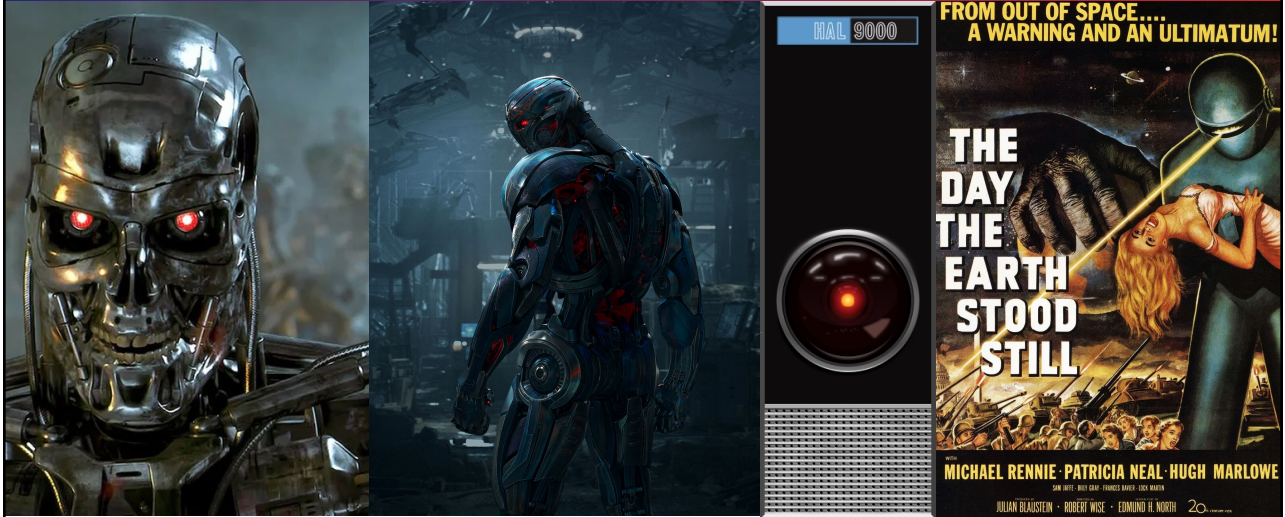
California Community Colleges Real Estate Education Center Conference

Dr. Wallace Walrod
Chief Economic Advisor
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Rise of the Robots?



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Automation and Daily Life



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Automation and Travel

Horse-drawn carriage, Boise, ID, 1910



Tesla Model, S, 2022



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Automation and Communication



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Broader Workforce Trends (Pre-COVID)

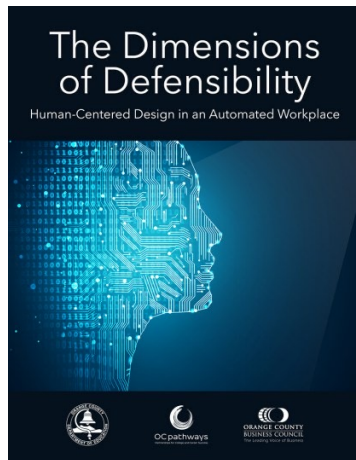


- Automation (perception and reality)
- Broader Industry 4.0: IoT, smart factories, big data
- Technology-driven obsolescence of jobs and industries: IE telephone operator and video rental
- Rise of the gig economy



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Defining Defensibility



- **Defensibility** is an occupation's resistance to being replaced by a machine.
- A score of 1 means an occupation cannot be replaced.
- Defensibility is a strategic framework that focuses on developing non-automatable skills, values and other occupational characteristics.



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Defensibility Scores of Selected Occupations


- Aerospace Engineers (77.2)
- Lawyers (81.1)
- Postsecondary Teachers (86.6)
- Public Relations Specialists (90.0)
- Accountants and Auditors (93.1)
- Camera Operators, Television, Video and Film (99.2)
- Tax Preparers (102.0)
- Parking Enforcement Workers (106.2)
- Pharmacy Technicians (109.9)
- Fast Food and Counter Workers (130.8)



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Dimensions of Defensibility


Dimension 1: Routine vs. Non-Routine	Dimension 2: Preferences, Values, and Styles	Dimension 3: Skills	Dimension 4: Education
<ul style="list-style-type: none">• The demise of routine physical and cognitive labor	<ul style="list-style-type: none">• Preference and personality: the deepest layer• The translation of personality into the workplace	<ul style="list-style-type: none">• Technological development and the changing payoff to skills• How skills interact with automation	<ul style="list-style-type: none">• The relationship between educational attainment and defensibility

 ORANGE COUNTY BUSINESS COUNCIL

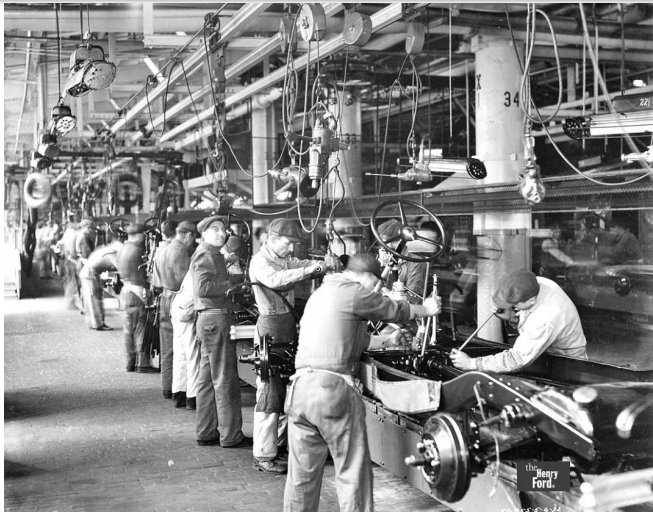
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Dimension 1: Routine vs. Non-Routine Work


Increasing Importance of Non-Routine Work

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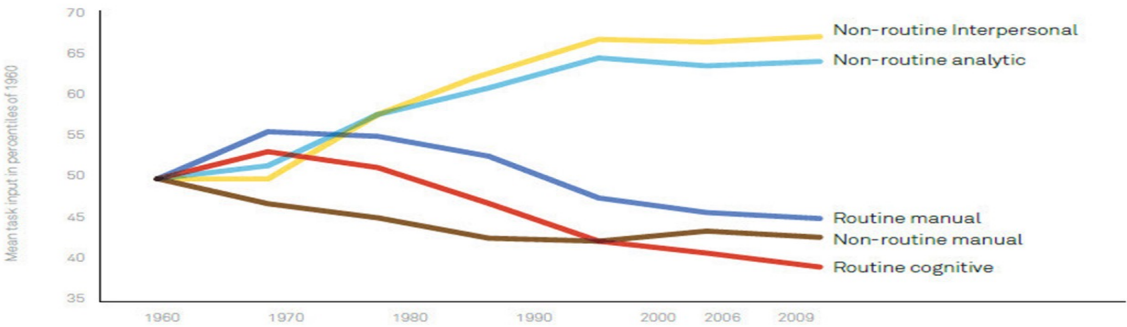
Assembly Line, Ford River Rouge Complex, 1930s



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Increasing Importance of Non-Routine Work

Figure 1 Non-routine Tasks on the Rise in the U.S. Labor Market

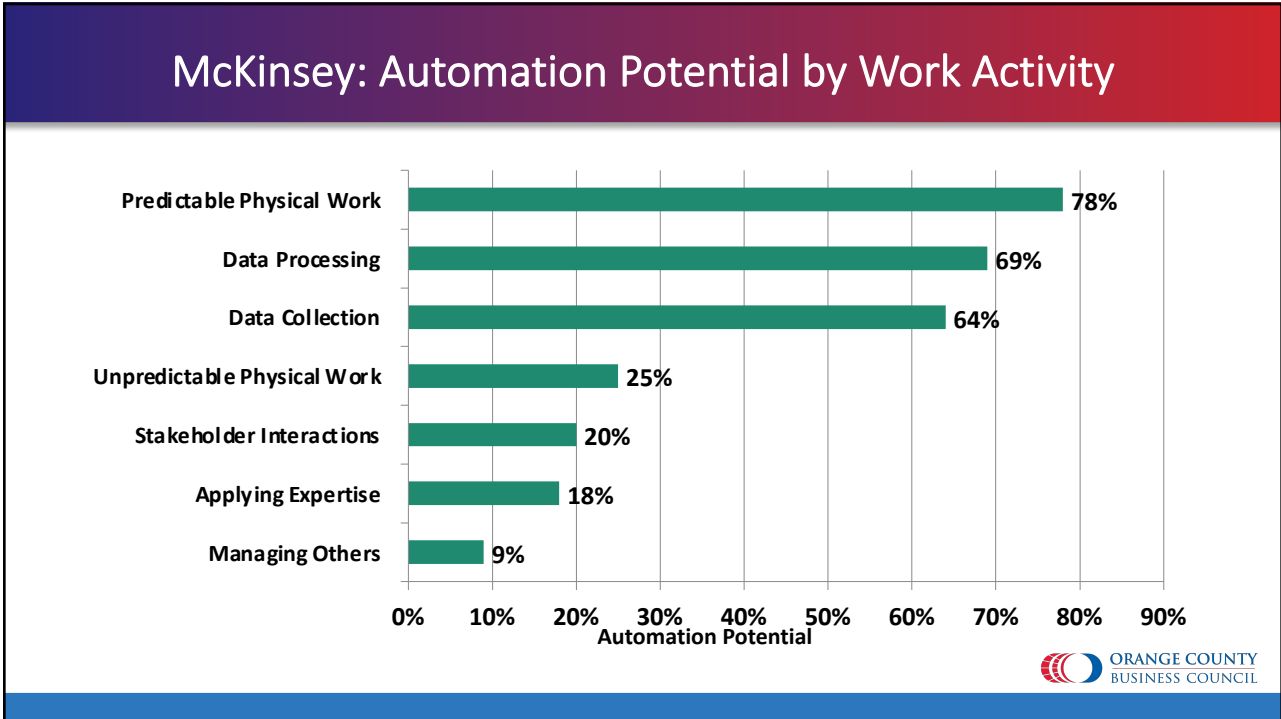


Year	Non-routine Interpersonal	Non-routine analytic	Routine manual	Non-routine manual	Routine cognitive
1960	50	50	50	50	50
1970	55	50	55	47	53
1980	60	58	55	45	51
1990	65	62	50	43	45
2000	67	65	47	43	42
2006	67	64	46	44	41
2009	67	64	45	43	40

Source: David H. Autor and Brendan M. Price. "The Changing Task Composition of the US Labor Market: an Update of Autor, Levy and Murnane (2003)". MIT Mimeograph, Massachusetts Institute of Technology, 2013.



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The Automated Factory

Nissan Smart Factory, 2022.



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Automating Routine Cognitive Work

Henn-na Hotels, Japan



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Dimension 2: Job Preferences, Values and Styles

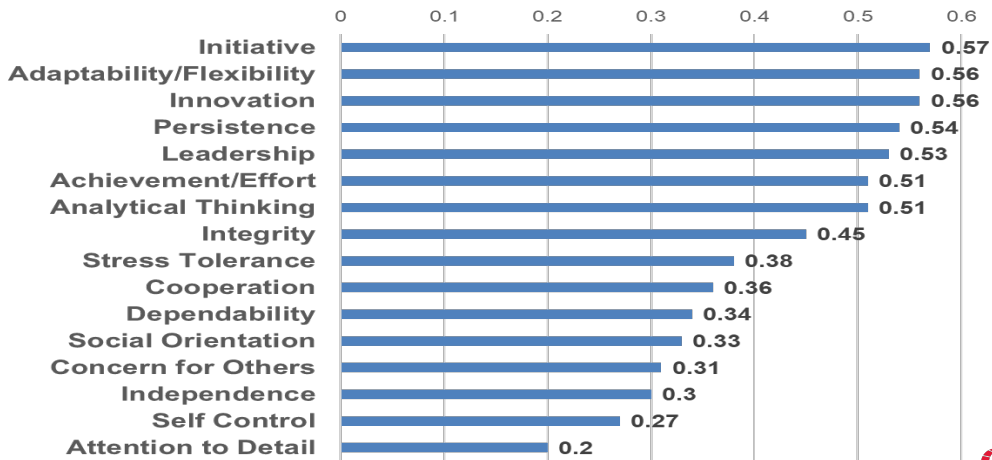
Defensibility and Initiative, Flexibility and Innovation



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Work Styles and Defensibility

Correlation between Variables within Work Style Dimension and Occupational Defensibility* Scores



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Initiative,
Adaptability,
Flexibility,
Innovation and
Persistence
during COVID-
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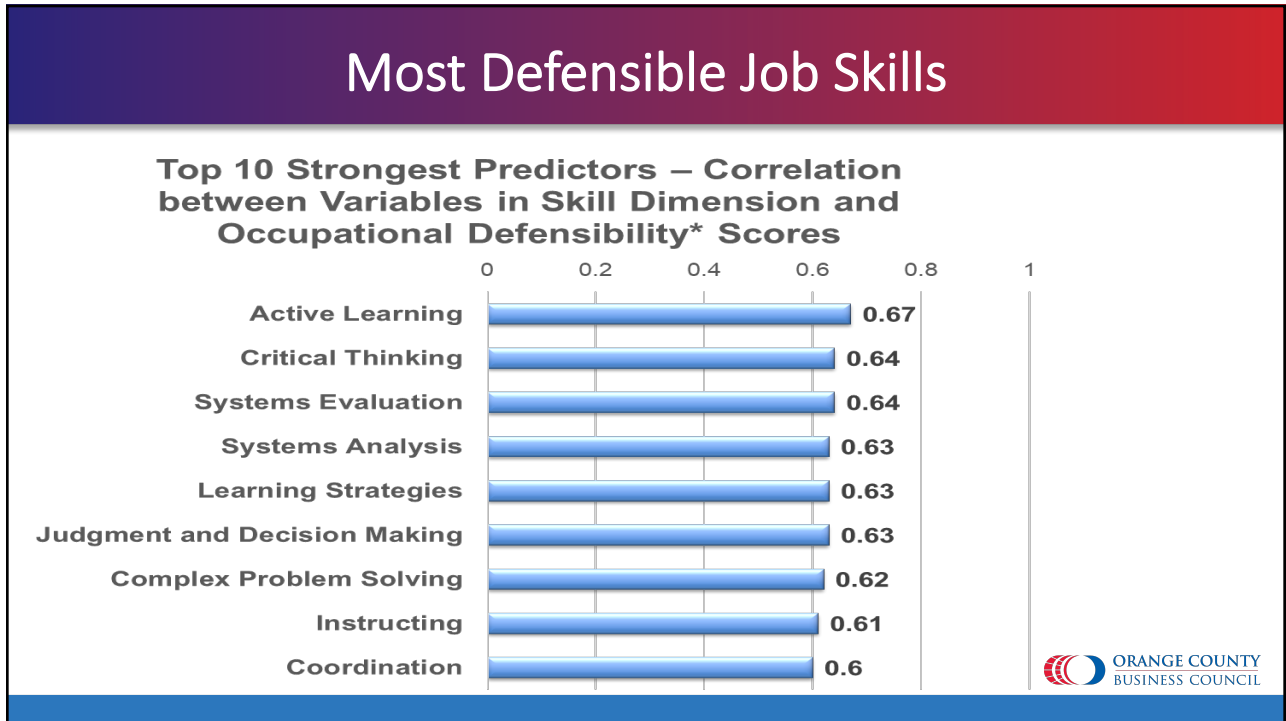


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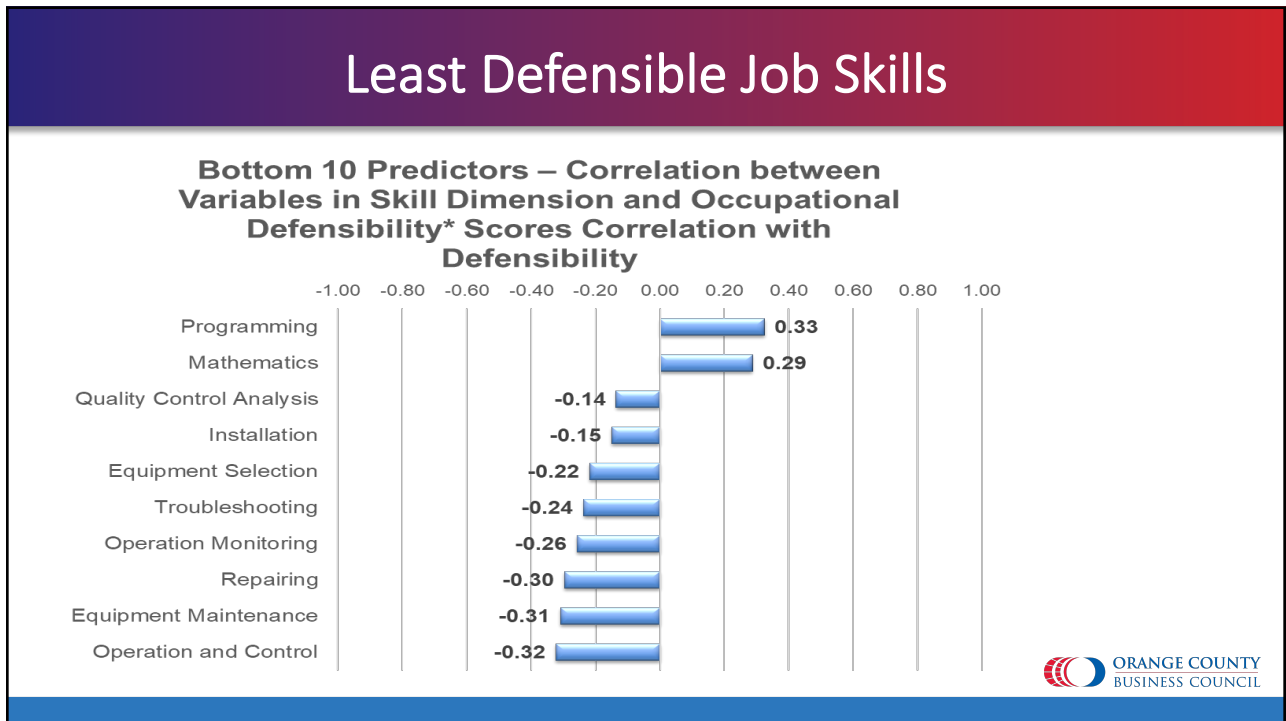
Dimension 3: Skills

The Most and Least Defensible Skills

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Dimension 4: Education

The Five Job Zones



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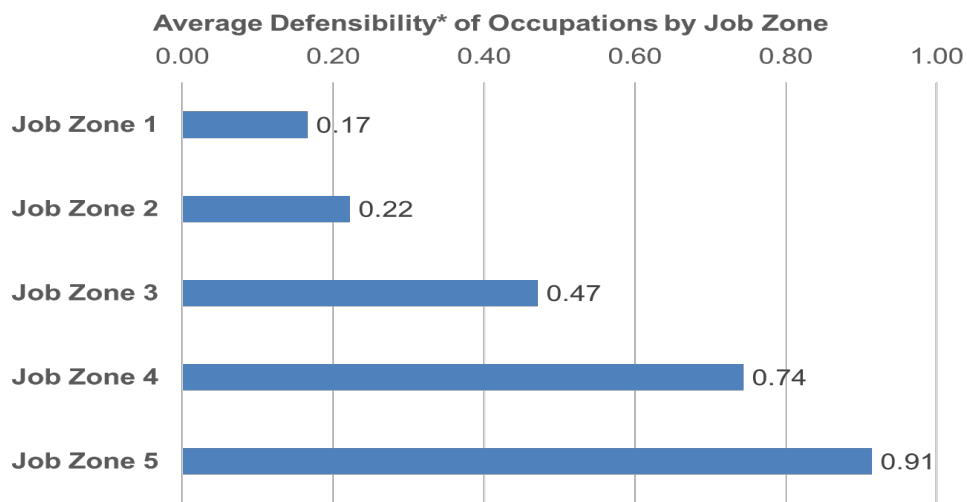
Job Zones

- **Job Zone 1:** Less than a high school diploma, such as Dishwashers and Waiters
- **Job Zone 2:** Occupations requiring a high school diploma such as Animal Control Workers and Hoist and Winch Operators
- **Job Zone 3:** Middle skills occupations requiring Associate's degrees or certificates, such as Dental Hygienists and Physical Therapist Assistants
- **Job Zone 4:** occupations requiring a Bachelor's degree, such as Budget Analysts, Occupational Health and Safety Specialists, Software Developers
- **Job Zone 5:** occupations that require a graduate degree such as Education Administrators, Postsecondary, Lawyers, Soil and Plant Scientists



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Correlation Between Education & Defensibility



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The Most Defensible Job Characteristics

1. Creativity
2. Idea Generation
3. Values Achievement
4. Values Recognition
5. Requires Constant Learning and Up-Skilling
6. Requires Teaching Others
7. Requires Contributions to Strategy and Planning
8. Requires Data Analysis and Monitoring
9. Values Working Conditions
10. Requires Coordinating with Others



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The Classroom:
Past, Present
and Future



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Automation and Real Estate

Defensible Skills and the Role of Community Colleges



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The Role of Community Colleges

- How can Community College real estate programs prepare students for success in an increasingly automated workplace?



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Defensibility of Real Estate Occupations

- Property, Real Estate, and Community Association Managers (83.8)
- Title Examiners, Abstractors, and Searchers (87.3)
- Property Appraisers and Assessors (89.4)
- Loan Officers (91.7)
- Real Estate Sales Agents (91.7)
- Advertising Sales Agents (95.3)
- Real Estate Brokers (99.2)



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Property, Real Estate, & Community Association Managers (83.8)

- **Most Defensible Work Styles:** Initiative, Leadership, Persistence, Innovation
- **Most Defensible Skills:** Active Learning, Critical Thinking, Judgment and Decision Making
- **Most Defensible Work Activities:** Developing Objectives and Strategies, Thinking Creatively, Providing Consultation and Advice to Others (the three most defensible work activities!)
- **Most Defensible Abilities:** Speech Clarity, Written Expression, Written Comprehension, Oral Expression, Oral Comprehension, Category Flexibility
- **Job Zone 4**



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Title Examiners, Abstractors, and Searchers (87.3)

- **Most Defensible Work Styles:** Initiative, Adaptability/Flexibility, Persistence, Achievement/Effort
- **Most Defensible Skills:** Critical Thinking, Active Learning, Complex Problem Solving, Coordination
- **Most Defensible Abilities:** Written Expression, Written Comprehension, Oral Expression, Oral Comprehension, Speech Clarity
- **Job Zone 2**



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Property Appraisers and Assessors (89.4)

- **Most Defensible Work Styles:** Initiative, Adaptivity/Flexibility, Persistence, Leadership
- **Most Defensible Skills:** Active Learning, Critical Thinking, Judgment and Decision Making, Complex Problem Solving
- **Most Defensible Abilities:** Oral Expression, Oral Comprehension, Written Expression, Written Comprehension, Speech Clarity
- **Job Zone 4**



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Loan Officers (91.7)

- **Most Defensible Work Styles:** Initiative, Adaptivity/Flexibility, Innovation, Persistence, Leadership
- **Most Defensible Skills:** Active Learning, Critical Thinking, Judgment and Decision Making, Complex Problem Solving
- **Most Defensible Abilities:** Oral Comprehension, Oral Expression, Speech Clarity, Written Expression, Written Comprehension
- **Job Zone 4**



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Real Estate Sales Agents (91.7)

- **Most Defensible Work Styles:** Initiative, Adaptivity/Flexibility, Innovation, Persistence
- **Most Defensible Skills:** Active Learning, Critical Thinking, Complex Problem Solving
- **Most Defensible Abilities:** Oral Comprehension, Oral Expression, Speech Clarity, Written Comprehension, Written Expression, Information Ordering
- **Job Zone 3**



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Advertising Sales Agents (95.3)

- **Most Defensible Work Styles:** Initiative, Adaptivity/Flexibility, Innovation, Persistence
- **Most Defensible Skills:** Active Learning, Critical Thinking, Judgment and Decision Making, Complex Problem Solving
- **Most Defensible Abilities:** Oral Comprehension, Oral Expression, Speech Clarity, Written Comprehension, Written Expression, Information Ordering
- **Job Zone 3**



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Real Estate Brokers (99.2)

- **Most Defensible Work Styles:** Innovation, Initiative, Adaptability/Flexibility, Persistence, Leadership
- **Most Defensible Skills:** Active Learning, Critical Thinking, Judgment and Decision Making
- **Most Defensible Work Activities:** Thinking Creatively, Developing Objectives and Strategies
- **Most Defensible Abilities:** Oral Comprehension, Oral Expression, Speech Clarity, Written Comprehension, Written Expression
- **Job Zone 4**



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Summary: Key Defensible Real Estate Skills & Abilities

Skills

- Active Learning
- Critical Thinking
- Judgment and Decision Making
- Complex Problem Solving

Abilities

- Speech Clarity
- Written Expression
- Written Comprehension
- Oral Expression
- Oral Comprehension



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The Great Resignation

Supply Chain Solutions: Reshoring And Offsetting The Great Resignation And Demographic Drought

The Great Resignation: Why more Americans are quitting their jobs than ever before

Here's What's Behind The Great Resignation, and How Employers Can Be Prepared

A lack of work-life balance and declining job satisfaction are among the greatest factors contributing to mass employee departures.

WORK

Professor who predicted 'The Great Resignation' shares the 3 trends that will dominate work in 2022

OPINION | THE WASHINGTON POST

The Underside of the 'Great Resignation'

The trend toward idleness has been years in the making, says the author of 'Men Without Work.' That's an ill omen for the economy and the culture.

I Quit: How to Stem the Great Resignation

Employers and the public at large need to weigh important changes to curb America's mass exodus of workers.

After the Great Resignation, Tech Firms Are Getting Desperate

Faced with a shortage of qualified workers and fierce competition, companies are offering candidates money to interview and plush perks if they stay.


The Great Resignation Has Caused A Perfect Storm For The Gig Economy

- Almost 70 million Americans left their jobs in 2021
- 36% of employees surveyed by McKinsey quit without a new job lined up
- 40% employees say they are at least somewhat likely to leave their jobs in the next 6 months
- 64% of employers surveyed by McKinsey predict that this problem will continue or worsen in the next 6 months




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Soft Skills Needed for Hybrid Teams



- Ability to work independently
- Attention to detail
- Business acumen
- Collaboration in virtual teams
- Comfort with change
- Commitment to continual learning
- Communication, written and verbal
- Creativity and innovation
- Critical thinking
- Emotional intelligence
- Leadership qualities
- Prioritization and multitasking
- Problem solving
- Project management
- Public speaking



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Final Thoughts

- Community College programs can make a major difference – by developing key defensible Real Estate skills
- Labor market information is a vital tool for Community Colleges
- Automation may take over some activities, but Real Estate occupations have many defensible aspects.

