

# Computer Science to Data Science

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Invited Talk

NIT Trichy

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# Talk Summary

- Carrier to Content evolution
  - Railways, Airlines, Automotive, Electricity
- Evolution of computer industry
  - Hardware evolution, Software evolution
- Current IT scene in India
- Future opportunities
- Summary
- Q & A
- Thank you

# Carrier to content evolution

- **Railroad industry**
  - Railways, Goods transport, Trains, Logistics & Courier
- **Airline industry**
  - Airplanes, Airports, Airlines, FedEx, Air Ambulance
- **Automotive**
  - Highways, Trucks, Passenger cars, Car rentals, Uber, Travel & Tourism
- **Electricity**
  - Bulb, Generator, White goods, Industrial automation

# Evolution of Computer industry

- Calculations & computing intensive hardware
- IBM, BUNCH
- Intel (processor), Samsung (RAM, Monitor), HP (printer)
- Microsoft (O/S), Adobe (application)
- Google, Facebook, Twitter, WhatsApp, Skype, YouTube. FlipKart, PayTM

# Current IT scene in India

- IT services dominance
  - TCS, Infosys, Wipro, CTS, Mahindra, HCL
  - Largest “organized sector” job creator for 20 years; 4.5 million direct jobs
  - Largest export (\$160 billion)
  - 7 to 8% of GDP
  - Sustains growth in real estate, automotive, travel & tourism

# Future opportunities

- Enormous confusion today
  - Automation will take away jobs
  - Infosys & Wipro are “shrinking”
  - Obituary of Indian IT services
  - 1,000+ engineering colleges will shut down shop
- Data Science (Analytics) offers much larger opportunities
  - Every industry would need data science – Banking, financial services, core, automotive, hospitality, transport, education, health, government
- Computer industry / CS academics of the 60’s to 80’s could not predict IT services industry of the 90’s to today; today’s industry / academic / government leaders cannot predict the future of Data Science; UG programs in CS took off only in 80’s; DS would take time; no one predicted FB; there will be similar opportunities in DS!
- Jobs in dozens in 60’s, 100’s in 70’s, 1,000’s in 80’s, 10,000’s in 90’s, Lakhs in the last decade, millions in this decade; tens of millions in the next decade!

# Summary

- Carrier to content evolution that impacted other industries is impacting computer industry – it is no different
- Data Science is still evolving; would evolve over the next two decades
- Maths / Stat that gave the “competitive edge” to IT professionals from India would continue to be of help in Data Science too
- It is truly exciting time; work hard and benefit
- EECS students with programming, Maths / Stat and Data skills would thrive truly well
- Learn as much as you can in the College; the foundations will see you through

# Summary

- Thank you Dr. B. Venkataramani
  - Thank you REC / NIT Trichy
  - Thank you audience
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- Any questions?