



Beyond Data Forensics: How to Deal with Flagged Candidates

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So, Data Forensics has Flagged a Registration Examination Candidate: What Next?

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Overview

- What is Data Forensics
- Case Studies Involving Flagged Candidate(s)
- Lessons Learned

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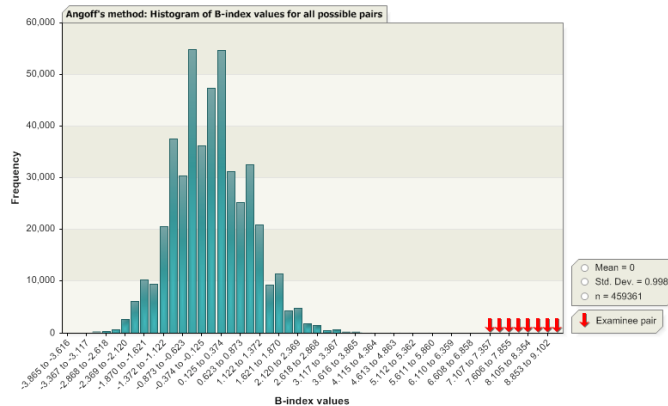
What is Data Forensics

- Data forensics is widely used in a range of settings
 - Credit card fraud
 - Online gaming
 - Sports betting
 - Securities (e.g., stocks and bonds)
- All methods involve two steps:
 1. Establish a baseline of “normal” data
 2. Flag outliers



What is Data Forensics

- Routine data forensics used for the CPNRE
- Involves two complementary tools



- B-index (number of identical incorrect responses)
- g2-index (number of identical responses)

- A baseline of normal data is determined through all possible pairs
- Individual pairs are compared



When candidates are flagged

Three possible explanations

1. The candidates genuinely colluded
2. Statistical anomaly (i.e., very bad luck)
3. Other alternative explanations
 - Candidates studied together
 - Candidates had a copy of the exam or answer key



When candidates are flagged

Investigation can include

1. Seating charts
2. Proctor observations
3. Irregularity/incident reports
4. Exam response data



Strengths and Limitations of Data Forensics

Strengths

- Unbiased and independent analysis
- Backed by research
- Strong corroborating evidence

Limitations

- Cannot detect all types of misconduct
- Can be difficult to understand
- Analysis flags pairs of candidates



2018

- The first flag
- Isolated response
- Regular Data Forensics



2020

- Proctored test centres
- Virtual proctoring in June 2020
 - Pass rates
 - Flexibility in timing
 - Few complaints from candidates
 - No forensic flags for Alberta...in the beginning



June 2021

- 4 flagged candidates
- Options in Alberta
 - Ignoring
 - Conduct
 - Cancel



Human Element

- Emotional discussions
- Explanations are challenging
- Empathetic but firm



September 2021

- 6 flagged candidates
- 1 candidate flagged for a second time
- Review of Alberta Process



Appeal Request – Candidate A

- Discussion with candidate
- Legal obligation
- Candidate's side of the story



Flagged Twice – Candidate B

- Investigation
- Results to the 6th candidate
- Linear-on-the-Fly Testing (LOFT)



Legal Counsel

- Investigation
- Moving forward
- Denial of Active Registration



Decisions and Outcomes

- Rewrite the exam
- Option to appeal registration to Active
- Costs to candidate



Why was this not a Disciplinary Issue?

- Investigative powers limited
- What is considered proof?
- Conflicting statements



Final Outcomes for 2 Candidates

- Denial of Exam Appeal
 - Rewrite in November
- No appeal regarding registration from either candidate
- 2nd candidate rewrote in January
- Both passed



Lessons Learned

- The “black box” principle (must be able to explain how they were flagged) - The “Trust me” principle



Lessons Learned

- Lack of policies on what to do when someone is flagged
- Regulatory limitations to data forensics and enforcement
- Cannot appeal because candidate was not denied registration



Where We Are Now

- Policy in place
- Exam format moved to LOFT
- Consideration of other data forensic tools



Questions to Consider

- Does your exam involve a data forensics component?
- Can your exam result be appealed and what does that mean?
- Do you have policies in place to manage flagged candidates?



Conclusion

- Learning experience
- Balance the data forensics, exam security, candidate expectations and declarations
- Definitive in the decision





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Thank You

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