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An Automated Employee Timetabling System

Employee scheduling is a difficult challenge for many business owners. In this poster presentation, we outline a user-friendly automated timetabler based on a three-dimensional integer linear program that accommodates employee seniority, shift type, labour laws, and vacation requests while optimizing for employee availability preferences. This new system builds upon our previous work by taking into account hourly floor constraints for status employees, predesignated shifts, and a bonus system to assign employees consecutive days off. This method has successfully been implemented at the retailer, Mountain Equipment Co-op, in Victoria, BC; a store with over 100 employees, 300 shift types, 40 possible roles, and 4 possible employee status tiers.