

**EVALUATION OF DRIVER PERFORMANCE WHILE  
MAKING UNPROTECTED INTERSECTION TURN  
UTILIZING NATURALISTIC DATA INTEGRATION METHODS**

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Thesis submitted to the faculty of the  
Virginia Polytechnic Institute and State University  
in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

in

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## Virginia Tech ETD Fair Use Analysis Results

*This is not a replacement for professional legal advice but an effort to assist you in making a sound decision.*

Name: Sudipto Aich

Description of item under review for fair use: Figure 1. Fatalities at Intersection by Traffic Control Device in 2007. Source: FHWA(2009), The National Intersection Safety Problem. Intersection Safety Issue Briefs, U.S. Department of Transportation, Federal Highway Administration, Washington D.C.

Report generated on: 01-13-2012 at : 09:44:00

### **Based on the information you provided:**

#### **Factor 1**

Your consideration of the purpose and character of your use of the copyright work weighs: *in favor of fair use*

#### **Factor 2**

Your consideration of the nature of the copyrighted work you used weighs: *in favor of fair use*

#### **Factor 3**

Your consideration of the amount and substantiality of your use of the copyrighted work weighs: *in favor of fair use*

#### **Factor 4**

Your consideration of the effect or potential effect on the market after your use of the copyrighted work weighs: *in favor of fair use*

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**Draft 09/01/2009**

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Name: Sudipto Aich

Description of item under review for fair use: Figure 2. Fatalities at Intersection by Crash Type in 2007. Source: FHWA(2009), The National Intersection Safety Problem. Intersection Safety Issue Briefs, U.S. Department of Transportation, Federal Highway Administration, Washington D.C.

Report generated on: 01-13-2012 at : 09:47:41

### **Based on the information you provided:**

#### **Factor 1**

Your consideration of the purpose and character of your use of the copyright work weighs: *in favor of fair use*

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Name: Sudipto Aich

Description of item under review for fair use: Figure 3: Distribution of Total Crash Fatalities by Sex and Age group from 1996-2005, Source: Chang, D. (2008). Comparison of Crash Fatalities by Sex and Age Group. Washington, D. C.: NHTSA's National Center for Statistics and Analysis.

Report generated on: 01-13-2012 at : 09:52:05

### **Based on the information you provided:**

#### **Factor 1**

Your consideration of the purpose and character of your use of the copyright work weighs: *in favor of fair use*

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Name: Sudipto Aich

Description of item under review for fair use: Figure 4: Percentage of drivers speeding in fatal crashes by age and sex Source: NHTSA. (2008). Traffic Safety Facts, U.S. Department of Transportation. Washington D.C. National Highway Traffic Safety Administration.

Report generated on: 01-13-2012 at : 09:54:48

### **Based on the information you provided:**

#### **Factor 1**

Your consideration of the purpose and character of your use of the copyright work weighs: *in favor of fair use*

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Description of item under review for fair use: Figure 5: Time-Space Interval Source: Highway Capacity Manual. (2000). Washington, D. C., United States of America: Transportation Research Board., available in Public Domain.

Report generated on: 01-13-2012 at : 09:58:16

### **Based on the information you provided:**

#### **Factor 1**

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Description of item under review for fair use: Figure 6: HCM critical Gap and Follow-up Time, Source: Gattis, J., & Low, S. (1998). Gap acceptance at non-standard stop-controlled intersections. University of Arkansas, Mack-Blackwell Transportation Center, Fayetteville. 1998 available in Public Domain.

Report generated on: 01-13-2012 at : 09:59:03

### **Based on the information you provided:**

#### **Factor 1**

Your consideration of the purpose and character of your use of the copyright work weighs: *in favor of fair use*

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Description of item under review for fair use: Table 1: Relative Risk (RR) in Ran Traffic Control Cases (FARS 1994-1995). All relative risks are calculated respective to drivers aged 40 -49. All Confidence interval using 95% confidence did not include 1.00 RR except those in bracket. Source: Preusser, D., Williams, A., Ferguson, S., Ulmer, R., & Weinstein, H. (1998). Fatal crash risk for older drivers at intersections. Accident Analysis and Prevention , 30 (2), 151-159.

Report generated on: 01-13-2012 at : 09:49:04

### **Based on the information you provided:**

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Your consideration of the purpose and character of your use of the copyright work weighs: *in favor of fair use*

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Name: Sudipto Aich

Description of item under review for fair use: Table 2: Emergency department transfer of others in two-vehicle crashes by drivers age, Wisconsin, 1992-1994, Source: Dellinger, A., Kresnow, M., White, D., & Sehgal, M. (2004). Risk to self versus risk to others: How do older drivers compare to others on the road? American Journal of preventive medicine , 26 (3), 217-221.

Report generated on: 01-13-2012 at : 09:50:38

### **Based on the information you provided:**

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Description of item under review for fair use: Table 3: PRT means and standard deviation (in seconds) for each event type and age group, Source: Edwards, C., Creaser, J., Caird, J., Lamsdale, A., & Chisholm, S. (2003). Older and younger driver performance at complex intersections: Implications for using perception-response time and driving simulation. Proceedings of the Second International Driving Symposium on Human Factors in Driver Assessment, Training and Vehicle Design, (pp. 33-38). Washington D.C.

Report generated on: 01-13-2012 at : 09:57:00

### **Based on the information you provided:**

#### **Factor 1**

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Description of item under review for fair use: Table 4: Base Critical Gaps for Stop-Controlled Intersections, Source: Highway Capacity Manual. (2000). Washington, D. C., United States of America: Transportation Research Board., available in Public Domain.

Report generated on: 01-13-2012 at : 09:59:43

### **Based on the information you provided:**

#### **Factor 1**

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Description of item under review for fair use: Table 5: Critical gap values during daytime and nighttime driving for all age groups. Source: Dissanayake, S., Lu, J., & Yi, P. (2002). Driver age differences in day and night gap acceptance capabilities. International Association of Traffic and Safety Sciences.

Report generated on: 01-13-2012 at : 10:00:33

### **Based on the information you provided:**

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Description of item under review for fair use: Table 21: Acceptable Gap Distance based on vehicle type, turn type and roadway construction, Source: Campbell, J. L. (2008). NCHRP 17-31 & 17-41: Human Factors Guidelines (HFG) for Road Systems Current Status and Next Steps . AASHTO.

Report generated on: 01-13-2012 at : 10:01:42

### **Based on the information you provided:**

#### **Factor 1**

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